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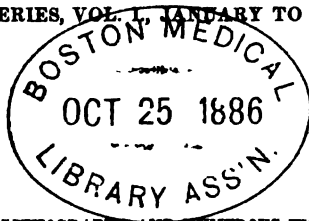
WITH LITHOGRAPHS AND NUMEROUS WOODCUTS.

ALPHABETICAL LIST

CONTRIBUTORS OF ORIGINAL ARTICLES.

ANDREW, JAMES, M.D., F.R.C.P., and Physician to the Royal Infirmary, Edinburgh.

BALLINGALL, SIR GEORGE, M.D., F.R.S.E., Professor of Military Surgery in the University of Edinburgh.

BEGBIE, JAMES, M.D., F.R.S.E., Fellow of the Royal Colleges of Physicians, and of Surgeons, Edinburgh.

BENNETT, JOHN HUGHES, M.D., F.R.S.E., Professor of the Institutes of Medicine and of Clinical Medicine in the University of Edinburgh.

CHRISTISON, ROBERT, M.D., V.P.R.S.E., Professor of Materia Medica in the University of Edinburgh, and Physician to the Queen for Scotland.

DOUGLAS, A. HALLIDAY, M.D., F.R.C.P., Physician to the Royal Infirmary, Lecturer on Clinical Medicine, Edinburgh.

DYCE, ROBERT, M.D., Lecturer on Midwifery, Marischal College and University, Aberdeen.

EASTON, J. A., M.D., one of the Physicians to the Glasgow Royal Infirmary, Lecturer on Materia Medica in Anderson's Institution, &c.

GAIRDNER, JOHN, M.D., F.R.C.S.

GAIRDNER, W. T., M.D., F.R.C.P., Pathologist to the Royal Infirmary.

GOODSIR, JOHN, F.R.SS. L. & E., Professor of Anatomy in the University of Edinburgh, &c.

GREGORY, WILLIAM, M.D., F.R.C.P., Professor of Chemistry in the University of Edinburgh.

HEALOP, T. P., M.D., Resident Medical Officer of the General Hospital, Birmingham.

HISLOP, P. B., M.D., Govan.

HUGHES, H. M., M.D., Assistant-Physician to Guy's Hospital, London.

JENNER, WILLIAM, M.D., London, Licentiate of the Royal College of Physicians, Professor of Pathological Anatomy in University College, London.

KILGOUR, ALEXANDER, M.D., one of the Physicians to the Aberdeen Infirmary.

KINGLAKE, HAMILTON, M.D., Physician to the Somerset and Taunton Hospital.

LITTLE, ROBERT, Esq., Surgeon, Singapore.

MACLAGAN, DOUGLAS, M.D., F.R.S.E., Surgeon to the Royal Infirmary, Lecturer on Materia Medica.

MILLER, JAMES, F.R.S.E., Professor of Surgery in the University of Edinburgh.

REDFERN, P., M.D., London, Lecturer on Anatomy and Physiology, and on Histology, at the University of King's College, Aberdeen.

ROBERTSON, WILLIAM, M.D., F.R.C.P., Physician to the Royal Infirmary, Edinburgh.

SIMPSON, J. Y., M.D., F.R.S.E., Professor of Midwifery in the University of Edinburgh.

SYME, JAMES, F.R.S.E., Professor of Clinical Surgery in the University of Edinburgh.

WALKER, JOHN, M.D., Inverness.

WALKER, WILLIAM, Esq., Ser-turer on Ophthalmic Sur

WRIGHT, THOMAS, M.D., Edinburgh.

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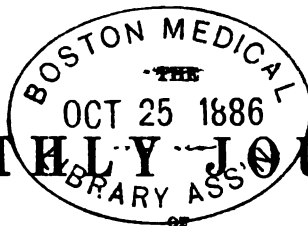
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ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Case of Hernia, strangulated within the Abdomen, and remedied by Operation.* By JAMES SYME, Esq., Professor of Clinical Surgery.

THE reduction into the abdomen of a hernial sac, with its contents in a state of strangulation, is an occurrence so rare in the practice of surgery, that systematic teachers and writers generally seem to regard it as a subject hardly deserving of their notice. Mr Teale, of Leeds, in his excellent work on hernia, has collected and presented in a tabular view all the cases of this kind which have been recorded by Arnaud, Dupuytren, and, more recently, Mr Luke, of London, from which it appears that the only instances of an operation performed with success, under such circumstances, in Great Britain, are one recorded by the last-mentioned gentleman, and another by Mr Wade. I have several times been asked to see patients on the point of sinking under the effects of this "reduction in mass," as it is termed by the French surgeons; and on two occasions have had an opportunity of examining the parts concerned, after death. The stricture caused by the neck of the sac was then so obviously the cause of death, and might have been so easily remedied by incision, that the non-performance of an operation within due time seemed matter of deep regret, and suggested as an imperative duty to operate whenever the grounds of suspicion should warrant this proceeding.

Upon the 13th of October last, I was asked by Mr Sidey and Dr Newbigging to see a patient, who appeared to be suffering from an

internal strangulation of the bowel. He was a man about fifty years of age, the butler of a family in town ; stout in frame, and rather corpulent. For eleven years he had been troubled by an inguinal hernia of the right side, and worn a truss to prevent its protrusion, until the last six weeks, during which he had not observed any swelling, although the bandage had not been used, in consequence of five months having elapsed without any appearance of it. At twelve o'clock of the preceding night, he had suddenly felt very ill, and sent for Mr Sidey, who saw him at one o'clock in the morning, complaining of intense abdominal pain, with quick pulse, cold perspiration, and vomiting. Upon careful examination, a tumour, about the size of a hen's egg, was felt in the right iliac region, without any external enlargement or thickening of the parietes of the cavity. Leeches were applied, and several injections administered during the night, with some palliation, but no material alteration, of the symptoms ; which continued much the same as they have been described, until we met about two o'clock in the afternoon—fourteen hours from the commencement of the attack.

As there could be no doubt that strangulation of the bowel existed, we examined the suspected region with all the care in our power, but, probably from the abdomen having become more distended, without being able to detect the tumour which had been felt the night before. All that we could perceive was a slight degree of induration or resistance, opposite the internal ring, over a space not much larger than the point of a finger. In these circumstances I should not have felt justified in undertaking any operation, unless Mr Sidey's accuracy of observation had been well known to me, and, in absence of any positive information that could be obtained at the time of our examination, rendered his detection of a tumour in the first instance sufficient ground for surgical interference.

Having placed the patient in a convenient position, I made a free incision of the integuments throughout the whole extent of the inguinal canal, tied the superficial epigastric artery, which had been cut, inserted my finger through the external ring, and guiding upon it a probe-pointed curved bistoury, divided the aponeurosis of the external oblique, up to the internal opening for the cord. There being still no appearance of a tumour, but a more distinct feeling of resistance, I divided the other coverings of the cord, and brought into view a dark-coloured mass, at the internal ring. Pulling this toward me, I readily drew out a hernial sac, about the size of a hen's egg, which, being opened, was found to contain a portion of the small intestine. Searching for the stricture, I encountered a difficulty from the sac yielding to the slightest pressure, and returning with its contents into the abdomen. I, therefore, seized it with a pair of forceps, and thus obtained the requisite tension, until I succeeded in passing the edge of my nail beyond the stricture, and guiding the bistoury upon it, effected the dilatation necessary for accomplishing reduction of the strangulated part. The patient was speedily

relieved from all his distress; and, although a very unfavourable
subject for any operation, through the kind and judicious manage-
ment of Mr Sidey, recovered completely, and is now quite well.

There seems to be considerable difficulty in satisfactorily accounting
for the strangulation. It was evidently caused by the neck of the sac;
but whether the hernial pouch had remained empty until the symp-
toms were produced by the entrance of intestine, or whether the
contents had previously been in a state of incarceration, is a ques-
tion that admits a difference of opinion. Mr Sidey informs me that,
about three weeks before the operation, the patient suffered for two
or three days from colic pains, but not of such a character as to sug-
gest the suspicion of hernia; and the stricture was so extremely
tight that I can hardly suppose the intestine could have been im-
prisoned, without affording signs of being so.

This case will, I trust, afford encouragement to operate for the
remedy of hernial tumours, reduced in a state of strangulation ; and
may also be regarded as possessing some interest from being, so far
as I know, the only instance of recovery from a hernia which has
become strangulated within the abdomen.

ARTICLE II.—*On the Detection and Treatment of Intra-Uterine
    Polypi.* By J. Y. SIMPSON, M.D., Professor of Midwifery in the
    University of Edinburgh.—(*With four Plates*).

AFTER a polypus, or pediculated tumour, arising from any part of
the interior of the uterus, has once passed downwards into the va-
gina, the diagnosis of the disease is, generally speaking, very easy,
the operation for its removal comparatively simple, and the result
of the treatment in the highest degree successful and satisfactory.

But before a uterine polypus has passed through the os uteri
—in other words, as long as it is still intra-uterine, or shut up and
contained within the uterine cavity—the disease has hitherto been
usually regarded and described as entirely beyond the reach of legi-
timate diagnosis and treatment. "It very frequently happens," ob-
serves Dupuytren, "that polypi concealed in the uterine cavity, in-
accessible to our senses and instruments, give rise to severe symp-
toms, the true cause of which *cannot* be determined." [1] "When
polypi," he again states, "are entirely included within the uterus,
the rational symptoms afford room only for conjecture ; and exami-
nation by the finger or speculum are both alike insufficient." [2] "So
long," remarks Madame Boivin, "as the polypus is concealed within
the uterus, all that can be ascertained is the increased size of that

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[1] Leçons Orales, vol. iii., p. 542.   [2] Ibid, p. 490.

organ."[1] "If the polypus," says Dr Ramsbotham, "be still in-·
cluded within the uterine cavity, and if the mouth of the organ be
closely shut, it is impossible to reach it by the finger, and conse-
quently quite out of our power to ascertain its presence."[2] "So
long," according to Mende, "as a polypus is enclosed in the uterine
cavity, its diagnosis is scarcely possible."[3] "True uterine polypi,
while they remain enclosed in the uterine cavity, furnish," observe
Roche and Sanson, "none but equivocal symptoms, which may be
confounded with those of pregnancy. These different symptoms
may also depend on chronic inflammation of the womb ; and it is
often impossible to distinguish this affection from polypus. In the
actual state of the science, there is but one case in which a certain
diagnosis may be formed—viz., when the neck being effaced, and
partly opened, it is possible to feel the rounded tumour within."[4]

These, and other passages that might be cited, show that intra-
uterine polypi are generally considered at the present day as placed
beyond the pale of any certain means of detection, or any possible
means of operative removal. And some of the older pathologists,
indeed, would seem to have believed that there was no necessity for
devising such means, inasmuch as, in their opinion, no danger was
connected with the disease as long as the polypus remained intra-
uterine. They held that the great source of prostration and peril
attendant upon uterine polypi—namely, the hemorrhage or menorr-
hagia which accompanies them—is not liable to supervene, till the
polypus has passed through the os uteri. Levret, for instance, was
of opinion that, as long as a polypus remained within the uterine
cavity, there was no accompanying hemorrhage, and that floodings
appeared only after the tumour had left the uterine cavity.[5]

Several years ago, I saw, with Dr Alexander Wood, a case, the
result of which was distressingly opposed to this doctrine.

CASE I.—The patient was about fifty-five years of age, and unmarried.
She had been suffering long under severe menorrhagia. The face was pale
and anæmic, and her health and strength broken down. On examining, per
vaginam, the os uteri was found closed ; but the uterus felt somewhat large
and distended ; and Dr Wood believing, with me, that the hemorrhagic drain
which was present might be the result of an intra-uterine polypus, the mecha-
nical dilatation of the uterine cavity was advised, but given up, in consequence
of local treatment being objected to. In a few weeks the patient sunk, under
the continuance of the hemorrhage. On opening the body, Dr Wood and I found
the lower part of the cavity of the uterus distended by a polypus, of the size
of a small plum, and attached to the back wall of the uterus by a nar-
row half-broken stalk. The lining membrane of the uterus was white and

[1] Practical Treatise on Diseases of the Uterus. Heming's Translation,
p. 200.
[2] Medical Gazette, vol. xvi., p. 406.
[3] Krankheiten des Weibes, p. 591.
[4] Nouveaux Élémens de Pathol. Med. Chir., tom iii., p. 284.
[5] Levret — Sur la Cure Radicale de Plusieurs Polypes de la Matrice,
p. 25, &c. &c.
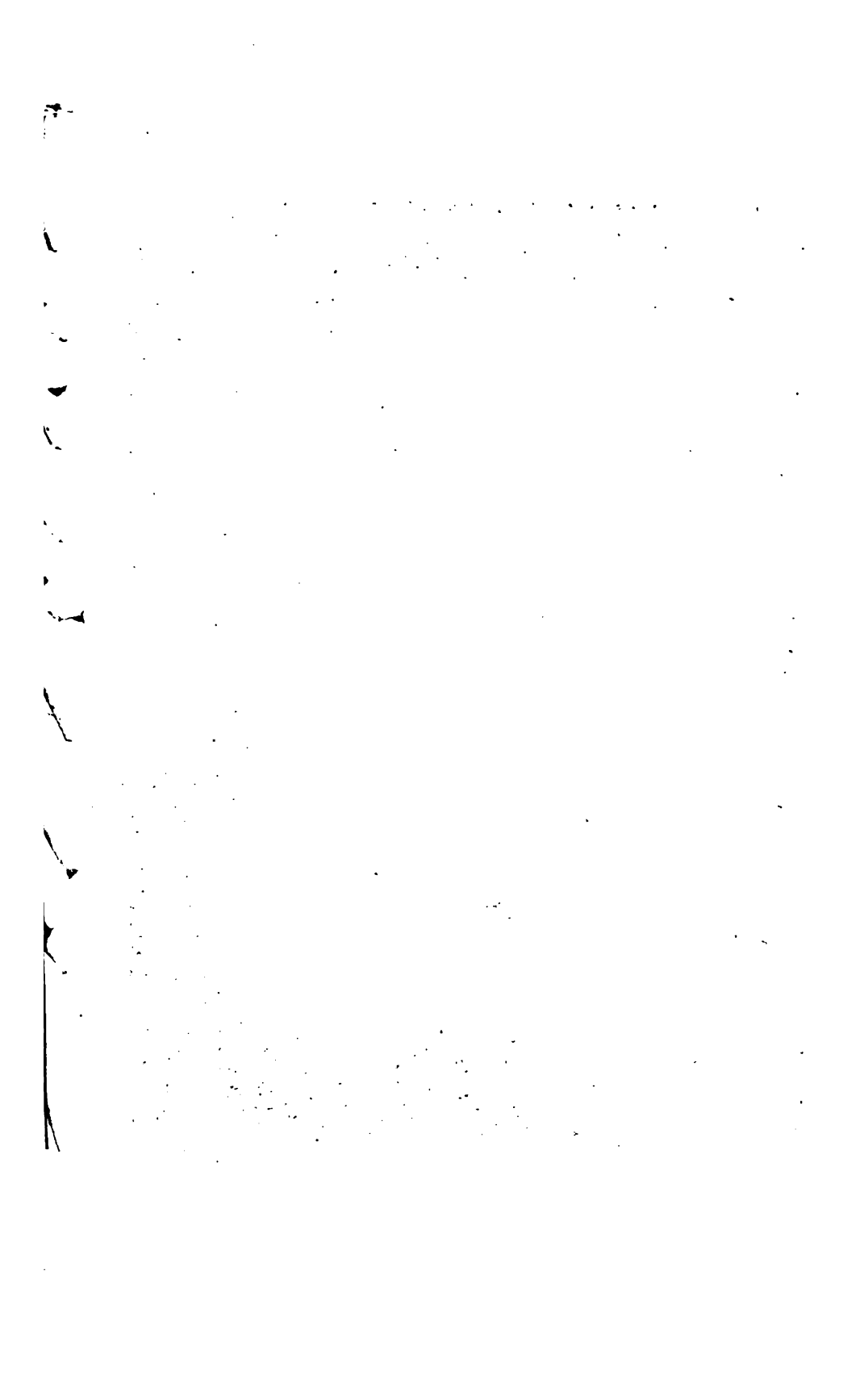
PLATE I

Drawn by a newly discovered method in Lithography   Fr Schenck Lith. Editor

Polypus, fatal by continued hemorrhage, while still included in the
uterine cavity

PLATE II

PLATE II.

Fig 1

Fig 4

Fig 2

Fig 3
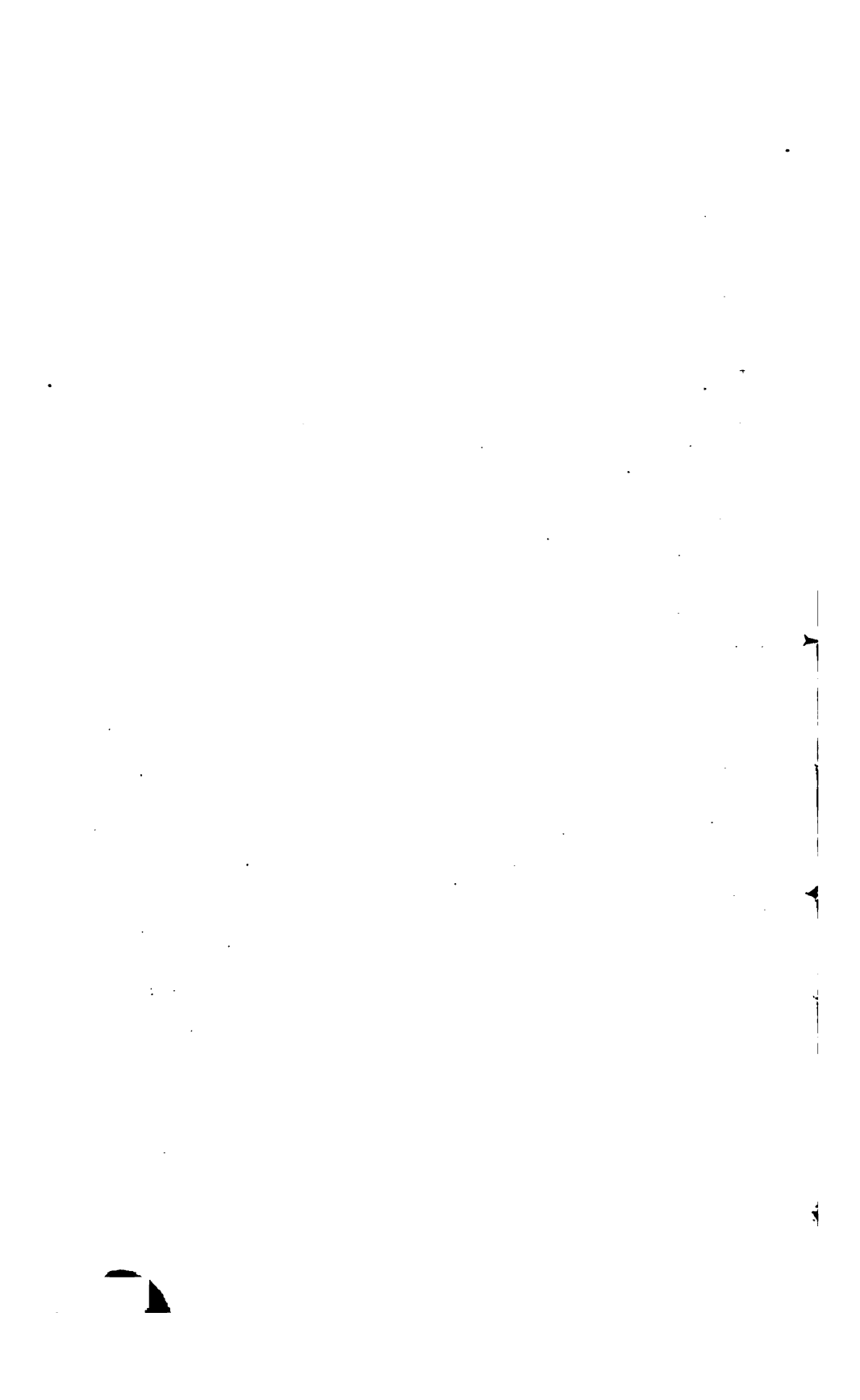
bloodless; but the polypus was red, from engorgement and effusion of blood in
its tissues. Its structure was fibrous ; and there was another small fibrous
tumour imbedded in the walls of the uterus, near the uterine extremity of the
right Fallopian tube. It had descended lower down than at the time we
examined, so as to have already dilated the cavity of the cervix; and the os,
at the time of death, had begun to open. It was evident that, if the cavity
of the os and cervix could have been artificially dilated during life, the poly-
pus would have come within reach, and the patient's life been saved.—(See
Plate I.) [1]

I have seen several other cases of intra-uterine polypus, where the
hemorrhage was both long in continuance and great in quantity.
Some years ago, along with the late Dr Henderson, of Corstorphine,
I excised a slender pendulous polypus, hanging from the os uteri, in
a patient who, some time previously, had nearly died of excessive
uterine hemorrhage of several days' duration, at Leamington ; but at
the period of that dangerous attack, the attendant physicians had
been unable to discover any uterine organic disease, to account for
the discharge. The polypus had not yet passed the os uteri.[2]

When nature, in cases of intra-uterine polypi, begins to expel the
tumour, and open up the os uteri, we may, at that stage, as stated
in a preceding quotation from the work of Roche and Sanson, find
it possible to make a diagnosis of the disease by being able to "*feel*
the rounded tumour within.*"* If art could furnish us with any means
of producing, at will, the same extent of opening of the os uteri, it
would enable us in the same way to "*feel* the rounded tumour with-
in*"* with our finger ; and it is evident that, by this means, we would
possess a power of detecting, with all the certainty of physical diag-
nosis, the existence or not of the disease within the cavity of the
uterus, in cases in which the attendant rational symptoms—as the
menorrhagia, uterine leucorrhœa, and perhaps the swelled state of
the neck or body of the uterus—might lead us to conjecture the pro-
bable presence of an intra-uterine polypus.

In 1844, in a communication[3] laid before the Medico-Chirurgical
Society of Edinburgh, I proposed a means of safely opening up the
cavity of the cervix and body of the uterus, to such an extent as
might enable us to introduce a finger into the uterine cavity, for
the purposes of diagnosis and operation in this and other diseased

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[1] The uterus and its included polypus, from this patient, are in the Uni-
versity Museum ; and Plate I. presents a faithful sketch of them, made from
the preparation, and showing the size and site of the polypus, its place and
mode of attachment, and the slight dilatation of the os that had taken place
before death.

[2] In this, and in one or two other instances in which I have seen extreme
degrees of flooding attendant upon small polypi, the narrow elongated poly-
pus was of a cellular structure internally, and externally spotted and rough-
ened over by numerous small linear-placed elevations, like those on the shell
of the echinus.

[3] "Mechanical Dilatation of the Cavity of the Os and Cervix of the Uterus,
as a Means of Diagnosis and Treatment in some Affections of that Organ."—
See abstract of it in the "Monthly Journal of Medical Science," 1844, p. 734.

polypus. A purulent discharge followed, and three largish pieces of organised structure were subsequently cast off. Her recovery of health, after these discharges ceased, was gradual but perfect. There has been no return of menorrhagia. About a year ago she called upon me, and the change from excessive pallor and emaciation of the face, to the hue and ruddiness of health, was so great, that I had difficulty in being convinced of the identity of my former patient.

The *Symptoms* which might, *a priori*, induce a practitioner to conjecture the probable existence of an intra-uterine polypus, are, as we have seen in the quotations I have already given (p. 3), of a very uncertain and equivocal character. The polypus, while still included within the uterus, is principally liable to give rise to the following groups of symptoms:—

1st. Menorrhagia, in consequence of the discharge of blood from the surface of the tumour. The attendant hemorrhages take place particularly at the menstrual periods, but are apt to recur also at other times; and the blood is sometimes fluid; sometimes coagulated; occasionally there is an almost constant red stained discharge. The effects of these repeated floodings upon the constitution of the patient vary with their amount; but if they go on increasing (as they usually do) in quantity and frequency, the patient's constitution becomes gradually more and more shattered and broken down by the amount of hemorrhagic discharge; and all the symptoms of anemia in their most marked degree at last supervene, as pallor of the face and lips, great muscular debility, palpitation, vertigo, dyspepsia, œdema, &c.

2dly. The discharge of mucous, purulent, or serous matter from the cavity of the uterus, in consequence of the mucous membrane of the organ becoming often irritated, inflamed, and even ulcerated by the presence and pressure of the polypus. If a severe leucorrheal discharge is present, and we ascertain by the speculum that it does *not* originate in ulceration or other morbid state of the external surface of the cervix, or of the vagina; and if we further detect, with the speculum, the discharge issuing from the cavity itself of the uterus, the probabilities of it originating in some pathological irritation within the uterus, will be necessarily increased. Sometimes the discharge, in cases of polypi, is fœtid, especially if it be retained, or mixed with decomposing blood.

3dly. Increased size of the cervix and body of the uterus in consequence of its interior being distended by the presence of the polypus, is traceable in those cases in which the polypus is of any great size. Not unfrequently intra-uterine, like vaginal polypi, are found combined with the presence of fibrous tumours in the walls of the uterus; and by these tumours the magnitude of the organ is increased, and its shape rendered more or less irregular. Fibrous tumours of the uterus are seldom or never situated in the walls of the cervix; and if the swelling and distension affect the cervix, there is consequently much more chance of its being a polypus and not an interstitial fibrous

tumour, than when we have similar symptoms attendant upon a similar augmented state of the body of the organ. Further, the probability of the disease being intra-uterine polypus would be increased, if, on successive examinations, we had an opportunity of ascertaining that the enlarged and distended state of the cervix was descending gradually lower and lower down towards the os; for polypi in their progress and descent (as seen in Case I. Plate I.) gradually dilate the cervix from above downwards in the same way as happens in pregnancy or abortion. They are born by a kind of chronic labour.

4thly. There may be symptoms of irritation and pressure upon the bladder, rectum, &c., if the polypus happen to be so large as to exert mechanical compression upon these or other parts, or dysmenorrhœa if it fills up the cavity of the cervix. And sympathetic pains may be present in the loins, limbs, &c.; or there may be sympathetic disturbance of the stomach, heart, &c., if the uterus is much irritated and excited by the presence and distension of the polypus.

But one or more of the preceding groups of symptoms may be altogether absent, though the uterus contain an intra-uterine polypus. The mechanical and sympathetic symptoms last alluded to are the most uncertain of all. For while almost all uterine diseases, however intrinsically different, give rise to similar secondary and sympathetic symptoms, we have often in other instances of the very same diseases, these same symptoms entirely wanting; just as in one woman during pregnancy we sometimes see severe, even serious, local, and constitutional symptoms; and in another woman, or even in the same woman in another pregnancy, we see the same condition of the uterus unattended by any special, local, or constitutional disturbance. Again, there may be no ascertainable increased volume of the uterus, as the polyus, especially if it is vesicular, and originates in the interior of the cervix, may be far too small to lead to any appreciable augmentation in the size of the organ, although, notwithstanding, the menorrhagia may be great; for the extent of flooding does not depend on the size of the polypus, small polypi like small hemorrhoidal excrescences, often being the source of severe and repeated hemorrhages. Further, the leucorrheal discharge which is sometimes attendant, may be entirely absent, as the polypus may not be irritating the mucous surface of the cavity in which it is inclosed. And lastly, polypi occasionally, though not very frequently, are present for a long series of years without producing any degree of hemorrhage or menorrhagia. In the following case, for example, there was a state of long-standing amenorrhœa, instead of menorrhagia, co-existent with the presence of a polypus, though the two conditions (the amenorrhœa and polypus) had probably no causal relation to each other.

CASE III.—A poor woman, from East Lothian, aged about 35, and of a weak and debilitated frame, came, some three or four years ago, to ask for advice regarding the state of her health. She described her case as one of long-standing amenorrhœa. For five or six years the catamenia had been entirely absent; and

she ascribed her broken health to this cause. On examining the uterus and ovaries, in order to ascertain if there was any organic change to account for the amenorrhœa, I found, with the uterine bougie, the cavity of the os and cervix uteri very small, and the latter apparently obstructed, about three quarters of an inch from the orifice. I introduced a long thin sponge tent, with the view of determining more correctly the state of the cervical cavity. On removing the sponge, two days subsequently, I found the lower part of the cervix natural, but a flattened polypus, of the size of a small cherry, attached by a short pedicle to the interior of the higher portion of the cervical cavity. The pedicle was easily seized with a pair of long slender polypus forceps, and separated by torsion or avulsion. For some time subsequently to this little operation, menstruation recurred,—the irritation of the sponge tent having probably so far roused the uterus to a restoration of its secreting functions; but a patient, from the same neighbourhood, about half a year ago, informed me that her health had relapsed again into its former unsatisfactory state.

The polypus, in the preceding case, was intra-uterine. During the past autumn I removed a uterine polypus, which had long passed down into the vagina, and yet had never given rise to menorrhagia.

CASE IV.—The patient, 55 years of age, had, for at least twenty-five years, been aware of the occasional protrusion, between the labia, of a portion of what she supposed a fold of thickened and insensible skin. When she first noticed it, she had called the attention of her medical attendant to it, an eminent London obstetrician, under whose kind care she was for many years placed. He examined the tumour and its relations; but advised her to let it alone. Two or three years ago a little sanious discharge began to appear, and continued to recur almost daily. On examining the projecting body, I found it an elongated polypus, of the size and figure of the fruit of the date, and depending by a long slender stalk, which passed upwards through the os uteri. I divided the stalk with a pair of blunt-pointed scissors, immediately below the os uteri, and in four days afterwards the patient set off on a long journey. The polypus was of a dense cellular structure. At one point, near its fundus, its surface was ulcerated. The ulcer was of about the size of a sixpence, and, no doubt, the source of the discharge that had latterly appeared. Perhaps the removal of this polypus, when it was first discovered, would have enabled the patient to become a mother, and saved from extinction one of the highest and oldest titles in the kingdom.

Cases, however, like the above, of uterine polypi, of long duration, without attendant hemorrhage, are exceptions, and not very common exceptions, to the general rule. And certainly the existence and return of attacks of menorrhagia, draining and undermining the powers of the constitution—(without the presence of any ascertainable organic disease in the vagina, or around the os uteri, to account for the floodings, and the persistence of this discharge, in despite of all constitutional care and treatment)—forms always the most frequent and principal symptom that would induce the practitioner to use means to ascertain if there existed an intra-uterine polypus, or any other intra-uterine lesion, that was the probable source of the hemorrhage. He would, a priori, have more expectations of detecting, in his investigation, an intra-uterine polypus, provided, along with the menorrhagia, there was an occasional leucorrheal or sanious discharge, coming—as proved by the speculum—from the cavity itself of the uterus, and not from the surface of the cervix; and provided, also,

there was an increased size or misshapen state of the cervix or body of the uterus, such as might result from the inclosure and distension of a polypus.

To convert, however, the probability derivable from such symptoms into a certainty, we must endeavour to read the true value of these rational symptoms by obtaining access to the cavity of the uterus itself, and ascertaining, by examination by the finger, if a polypus be present in that cavity or not, or if there be any other co-existent uterine lesion, capable of accounting for the symptoms. It is becoming every day more and more acknowledged, that we can alone discover uterine diseases, and discriminate them from each other, by appealing in this way to the evidence of physical diagnosis. And no remark could be, pathologically and practically speaking, more sound and true than that which Sir Charles Clarke many years ago made :—" The true character of any disease of the internal female organs can *only* be ascertained by examination."[1] With this view, in order to enable the finger to reach and examine the cavity of the uterus, the os and cervix must be opened up by a succession of sponge tents in the way already described. When an adequate degree of dilatation is obtained, the finger will be enabled to touch the tip of the polypus; and then the pediculated or polypous character of the tumour may be farther made out by passing either the finger or a uterine sound between its body and the containing cavity of the uterus. In making this examination, as in making most other examinations of the uterus, a rule requires to be followed which is too often forgot, namely to use both hands for the purpose. For if we are examining the uterus internally with the forefinger, or fingers of the right hand, the facility and precision of this examination will be found to be immensely promoted by placing the left hand externally over the hypogastric region, so as to enable us by it to steady, or depress, or otherwise operate upon the fundus uteri. The external hand greatly assists the operations of that which is introduced internally; and farther, we can generally measure, between them, the size, relations, &c., of the included uterus.

If without, or before, using sponge-tents, we are desirous to examine at the time when the os uteri is naturally most relaxed, we will find that time to be either immediately after a menstrual discharge, or immediately subsequent to any severe attack of intercurrent hemorrhage. Under such circumstances, we can sometimes introduce the finger partially into the os uteri, and ascertain the presence of any morbid body in the lower segment of the cervix; when in the same patient, at other times, this orifice is so completely shut as to prevent entirely such a proceeding. Sometimes, indeed, a small or elongated intra-uterine polypus will pass through the os uteri, at these times, so as to be felt by the usual vaginal examination; but will become retracted into the cavity of the cervix,

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[1] Diseases of Females, vol. i. p. 250.

during the interval between the hemorrhagic discharges. In the following case [1] this occurrence was observed:—

CASE V.—About eight years ago, I occasionally saw a patient, who suffered much from leucorrhœa and menorrhagia. At last her health became so much broken in consequence of these discharges, and the pallor of the face and lips, and other symptoms of anemia, so alarmed the patient, that she agreed reluctantly to submit to a vaginal examination. She had an objection, however, to me, on the score of youth; and the late Dr Beilby was so good as make the examination, and found a polypus, of the size of an almond, projecting from the lips of the os uteri. On Dr Beilby returning, two or three days subsequently, to put a ligature around the neck of the polypus, none could be found, and the os uteri was shut. The other symptoms, however, did not change; and, on the recurrence of a new hemorrhage, Dr Beilby made another examination, again found the polypus protruding, ligatured, and removed it.

In this instance, as in many others, the passage of the polypus through the os uteri did not produce any appreciable degree of pain. In enumerating the symptoms of intra-uterine polypus, I have omitted to state that, like polypi which have passed through the os uteri, they very rarely are attended with feelings of pain; and too often, both by the patient and the practitioner, the absence of pain is erroneously supposed to be a proof of the absence of organic disease. Sometimes, however, as they are pressing upon the lower part of the cervix and os uteri, or distending and passing through these parts, uterine contractions and pains temporarily supervene, similar to those of miscarriage; and, if there is any difficulty in the passage of the tumour, these pains may become exceedingly severe. In a case, in which a fibrous tumour of the uterus that had undergone the calcareous degeneration, and part of which had assumed a semi-pediculated or polypous form, the recurrent pains, when the mass came down upon the os uteri, appeared at times as extreme as those of the last stage of labour.

CASE VI.—The patient, now sixty-nine years of age, the mother of several children, had for several years suffered from recurring slight attacks of uterine hemorrhage. In February 1848, I saw her with Dr Hunter. The os uteri was drawn up so high, that it was with great difficulty that I could reach and touch it; the top of the vagina stretched up in the form of an inverted funnel, the apex being placed at its upper or narrow extremity, and hence it was impossible to introduce or use a speculum. At the same time, the abdominal parietes were so thick and full, that it was impracticable to ascertain in any way the state of the uterus by an external examination. Not feeling a polypus, however, I left with the idea that the cause of the menorrhagia was some form of carcinomatous disease of the uterus. Subsequently, in the month of July, all her symptoms became aggravated, and very severe bearing-down pains were superadded. These pains recurred regularly once a day, lasted in paroxysms for several long hours, and always left the patient weakened and prostrated. In consequence of them, Dr Hunter made another examination of the vagina, and found the os uteri, which was now pressed lower down, filled with an apparently irregular bony mass. I saw her again, and removed the calcareous mass, filling up the os uteri, with a portion also of fibro-calcareous tumour, which we found above it, and distending the lower part of the cervix.

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[1] See notice of an analogous case, by Dr Ramsbotham, in the Medical Gazette for 1835, p. 406.

The irregular calcareous portion protruded through the os uteri, was about the size of a hazel-nut, and the portion of fibro-calcareous tumour above it nearly four times that volume. The daily fearful pain which the patient had been lately enduring immediately ceased, and everything looked so favourable that we had every hope that the whole of the fibro-calcareous tumour, or poly-pus, had been removed. Last February, however, after some unusual exer-tion, the pains again recurred more severely, if possible, than before; and with this difference, that the attacks of them were now twice a day, instead of being only once, as on the first occasion. Opiates and sedatives had little or no effect towards their alleviation. On examining the os uteri, no new foreign body could be found anywhere within reach. As the patient's strength and spirits, however, were rapidly giving way, I dilated the os fully, by a succes-sion of sponge-tents, and found the cavity of the cervix occupied by another fibro-calcareous mass, larger than the first. After an ineffectual attempt to break it down and remove it, by strong lithotomy and other forceps, I dilated the os still farther with tents, with the view of, if possible, getting two or three fingers up to seize the tumour, and assist in its detritus and extraction. To allow the hand to pass into the vagina with this view, I was obliged to incise its orifice ; and, after no small difficulty, I was enabled to break off, by the fingers and forceps, four or five fibro-calcareous pieces from the mass in the cervix ; and these pieces, when afterwards conjoined together, were found to form a round-ish semi-pediculated tumour, of the size of an orange. In order to enable her to sustain the pain of these proceedings, the patient was kept, during this te-dious operation, under the influence of chloroform. The pains again ceased from the date of the removal of this second intra-uterine tumour ; and, under the kind care of her son, himself a physician, our patient made a good and steady recovery, and her health was restored by spending some of the autumn in the country. There still, however, remains in the uterine parietes some fibro-cal-careous structure, as I lately ascertained by passing a uterine bougie into the elongated cavity of the uterus, and striking it against its hard stony surface.

The *Treatment* of Intra-uterine polypi requires to be varied accord-ing to different circumstances, but particularly by the tendency or probability of the tumour passing downwards or not through the os; by the effects of the symptoms or the urgency of the case; and by the size and site of the polypus.

Two plans of procedure may be followed according to the nature and necessities of the case, viz., first, to wait till the polypus descend farther; or, secondly, to remove it immediately. It is a generally ac-knowledged principle in obstetric surgery, that a polypus of the uterus should be extirpated as early after its discovery as possible.[1] But when such a tumour is discovered still included within the uterine cavity, and the polypus seems gradually but certainly making its way down-

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[1] " In the treatment of this disease (uterine polypus) the first principle, un-disputed, I suppose, by those who are possessed of experience in the manage-ment of these morbid growths, is, that it ought by all means to be extirpated ; for unless it be removed, it will continue to grow larger and larger, till it ut-terly wears out life, and this especially if it be shooting from the upper part of the uterus, or even from the neck. It is, moreover, of vast importance in polypus, not only that it should be extirpated, but that this extirpation should be accomplished as early as possible. Lay this down, then, as a most important part of your practice, that polypi are not only to be taken away, but that they are to be extirpated early, as soon as they are discovered, and as soon as it is practicable."—*Blundell's Observations on Diseases of Women,* p. 126.

wards through the cervical cavity, and the hemorrhage and other symptoms are not urgent, it will assuredly be better to wait for its descent through the os; for after that its removal becomes much more easy and simple. The dilatation of the os and cervix by the sponge-tents will promote and facilitate its descent; and perhaps the internal use of the ergot of rye may aid it. But the degree of attendant hemorrhage and debility may be too great to entitle us to postpone the removal of the polypus; or the tumour may be attended by such a short pedicle as not to be capable of leaving the uterine cavity without dragging down with it, or inverting the fundus or some parts of the parietes of the uterus;[1] or it may be retained in its descent by adhesions formed between the surface of the uterus and the surface of the polypus. I once witnessed the dissection of a case of a large fibrous polypus included in the cavity of the uterus, and where inflammation had been present before death; the surface of the polypus was adherent to the surface of the uterus through the medium of a recently effused false membrane.[2] Even when an intra-uterine polypus has descended so far as even partially to open up the os uteri, it may remain in that situation for such a length of time, and with such results, as to place the patient in no small degree of danger. I shall quote, in illustration of this remark, an interesting case reported by Dr Meigs of Philadelphia, in his work on Female Diseases. Dr Meigs (p. 255), who quotes Dr Lee, to the effect, that "it would be folly to attempt the removal" of a polypus still retained in utero, details the case referred to in the following words :—

CASE VII.—Some months ago a lady came to me from New Jersey. She had been for some years labouring under a uterine disease, accompanied with violent and exhausting floodings. Upon arriving here, she was wholly unable to walk or sit up in her chair. I discovered a hard polypus, whose apex was lying just within the os uteri, which was a circular opening as large as a half dollar. The os uteri was pretty low down in the pelvis, it was very hard, and completely undilatable. The fundus uteri was half way up to the umbilicus, and the uterus hard and solid, so as to allow me to trace its outlines very clearly in my hypogastric palpation. I assure you I have rarely met with a more extreme case of anemia than in this person. This anemia was evinced not only in the pallor of her surface, and its flabbiness, and in her irregular breathing, the frequent palpitation of the heart, and the anemiacal throb of her pulses, but in the state of all her innervations, which were most miserable indeed, except when lying profoundly still in a low recumbency.

After a few days' refreshment from the journey, I attempted to do what I thought I should fail to do, namely, to get a ligature on the tumour. But I soon found how vain was such an attempt, for I never found the uterus a

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[1] Cases of intra-uterine and vaginal polypi tending thus to invert the uterus at the site of their pedicles, are detailed by Denman (Introduction to Midwifery, p. 106); Davis (Obstetric Medicine, p. 618); Dr Oldham (Guy's Hospital Reports, New Series, vol. ii., p. 105); Scoutetten (Gazette Medicale for August 1839); Crosse (Transactions of Provincial Medical Association for 1845, p. 321), &c.

[2] Library of Medicine, vol. iv., p. 335.

moment relax, nor open beyond the size of a half dollar. My attempt caused an attack of hemorrhage to come on, that I was glad to suppress by cold, by rest, and by opium.

I kept her here many months, in hopes of seeing the uterus enter into powerful contractions to throw off the morbid mass. I gave her large doses of ergot. I thought the ergotism that was produced might expel the polypus, but I was disappointed, and subsequently had reason to believe the tumour had formed strong attachments to the inside of the uterine walls, so low down, that I could reach them with my finger, but could not break them up.[1]

During her residence here, I thought to see her bleed to death before my eyes ; her life was hardly saved by the tampon, so perverse was the hemorrhage. At length I sent her home, with directions as to her health, and a request to be informed if the tumour descended into the vagina. It will never descend into the vagina, if the adhesions I supposed to exist are truly there.— Dr Meigs on *Females and their Diseases*, p. 257. Philadelphia, 1848.

But, secondly, the severity of the attendant hemorrhages, or the improbabilities of the speedy and entire descent of the intra-uterine polypus, may induce us to remove the tumour at once; and certainly this may be effected in most cases, though with greater difficulties than in cases in which the polypus has passed down into the vagina. To admit at all of the removal of an intra-uterine polypus, of any considerable size, the os uteri must be previously very fully dilated by sponge-tents; and perhaps it will sometimes be found necessary, at the time of operating, to gain additional freedom, by dividing any obstructing band of the os or cervix that may not have been fully dilated by the tents. Afterwards, we will require to proceed differently in different cases, in order to destroy or remove the polypus. We may only be able to accomplish this object by contusing and crushing the tumour, as I have described in a case already detailed. (See Case II.) In the instance in question, I grasped the polypus, for this purpose, with strong lithotomy forceps. In another similar case, after fully dilating the os and cervix, I seized a large intra-uterine polypus between the jaws of a screw-propelled lithotomy instrument—invented for the purpose of crushing vesical calculi—and was enabled, by it, to crush and destroy readily the structure and vitality of the included tumour. Occasionally, we may be enabled to divide the stalk of the polypus with a silver wire or ligature, acting on the principle of the chain-saw ; or we may reach it with very curved blunt-pointed scissors. The two following cases may serve to illustrate these two last mentioned methods of operating :—

CASE VIII.—A patient, æt. 36, about three years ago began to suffer under menorrhagia and dysmenorrhea. The catamenia became both too frequent in their return, as well as much too great in quantity ; but there was little or no leucorrheal discharge. Latterly coagula of blood accompanied the menstrual periods, and the patient felt much weakened by each attack. The dysmenorrhea generally came on on the second day of menstruation, and confined the patient for a couple of days, the third day being usually one of much sickness

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[1] The use of the uterine bougie would probably have determined this point ; or the mechanical dilatation of the os by tents would have enabled the finger fully to reach and break the adhesions.

as well as pain, particularly if the patient tried to assume the erect posture. I first saw this lady in July of the present year, and found the uterus somewhat enlarged, and externally irregular in form, from the presence of one or two small fibrous tumours in its body and fundus. But the os uteri was shut, and I could not ascertain if the debilitating hemorrhage was the result merely of the irritation of these tumours in the parietes of the uterus; or whether one of them, forming a polypus in the cavity of the organ, was its source. I wrote her medical attendant to dilate the os in order to determine this point; and she returned home to England. In September she came back to Edinburgh; but, in consequence of the state of her health, I did not venture to dilate fully the os and uterine cavity till towards the end of October. On doing so, I was enabled to detect the rounded extremity of a polypus hanging down, into the cervical cavity. During two or three days it descended somewhat lower, but ultimately remained fixed and stationary above and within the os. I found I could not move it further downwards, by fixing a vulsellum into it, and applying some dragging force. On the 6th November, assisted by Dr Duncan, I applied a silver wire above the body, and around the neck of the tumour, by the instrument figured in Plate III. After the instrument was fixed and adjusted, a few turns of the screw made the wire cut through the pedicle of the polypus, and without any pain or suffering on the part of the patient. The separated tumour was then pulled, by the vulsellum, through the os uteri. The polypus was of the size and shape of a plum, with a small portion of the pedicle attached. It was fibrous in its internal structure. The patient's recovery was slow, but uninterrupted. She has menstruated once since the operation, but without the discharge being excessive, as formerly, either in quantity or duration (it lasted only three days); and also without her former distressing dysmenorrheal pains.

The instrument employed in the preceding case (See Plate III.),[1] is a modification of one kindly sent to me by my friend, Dr Sabine, of New York. I am told it has been successfully used by various American practitioners for the removal of polypi in the vagina. The advantage which it possesses over the instruments of Niessens, Gooch, Davis, and others, in the removal of intra-uterine polypi is, that the screw power with which it is furnished enables us to use it with the power of a small chain-saw, for the immediate division of the pedicles of the polypi. And it is almost superfluous to observe, that if we can finish our operation, it will be much safer for our patient than leaving a rough instrument within the cavity of the uterus. The instrument itself consists of two parts, viz., two hollow canulæ, like those pertaining to the instruments of Niessens and Gooch; and of a second part, resembling the polypus instrument of Graefe of Berlin, with this difference, that it has a ring

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[1] Plate III. shows the instrument alluded to in the text, for seizing and dividing the pedicle of a polypus. Fig. 3 represents the two canulæ as they stand after their contained wires have been passed around the pedicle, d (Fig. 3), of a polypus. Fig. 1 shows the instrument used specially to divide the pedicle; a is the ring of the instrument, into which the canulæ are slipped, and which is run up along them to the pedicle (d); e is the noose of wire by which the pedicle is encircled; b is the knob or button on which the wires are twisted—it is made to descend along the linear slit f, by revolving the handle c. Fig. 2, shows the screw enclosed in the instrument (Fig. 1), with the handle c, and button b, in which it moves.
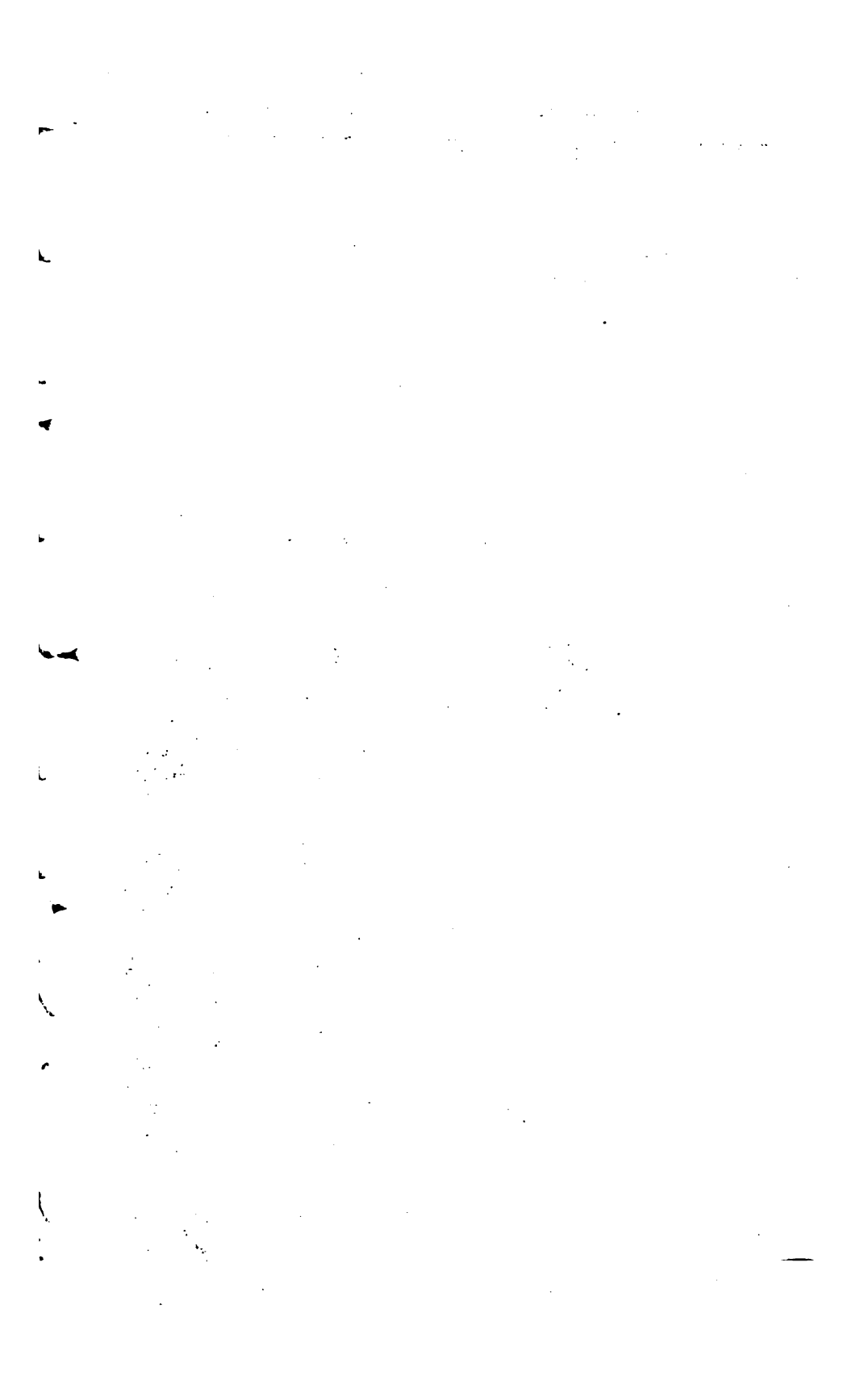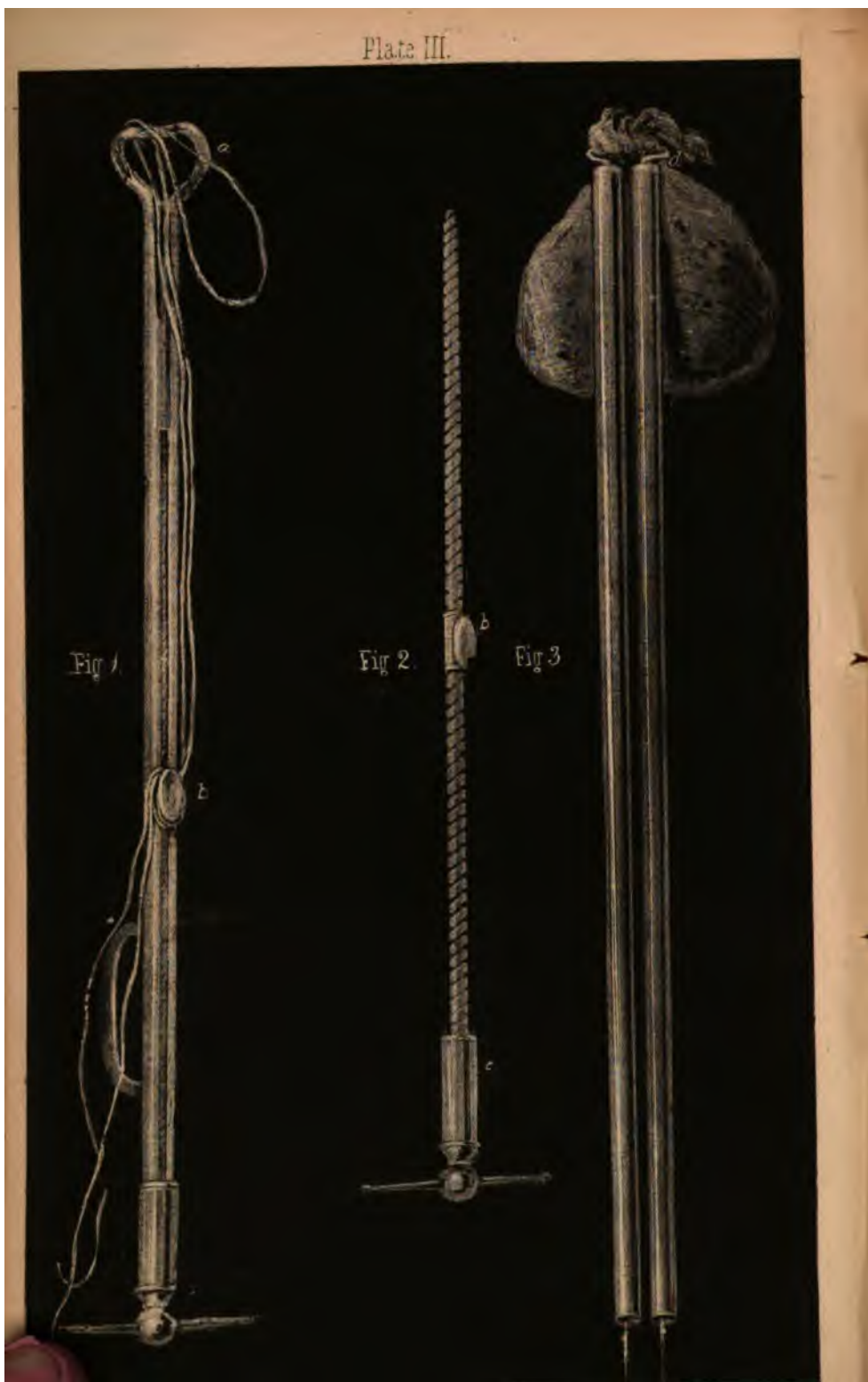
Plate III.

Fig 1.   Fig 2.   Fig 3.

Plate IV
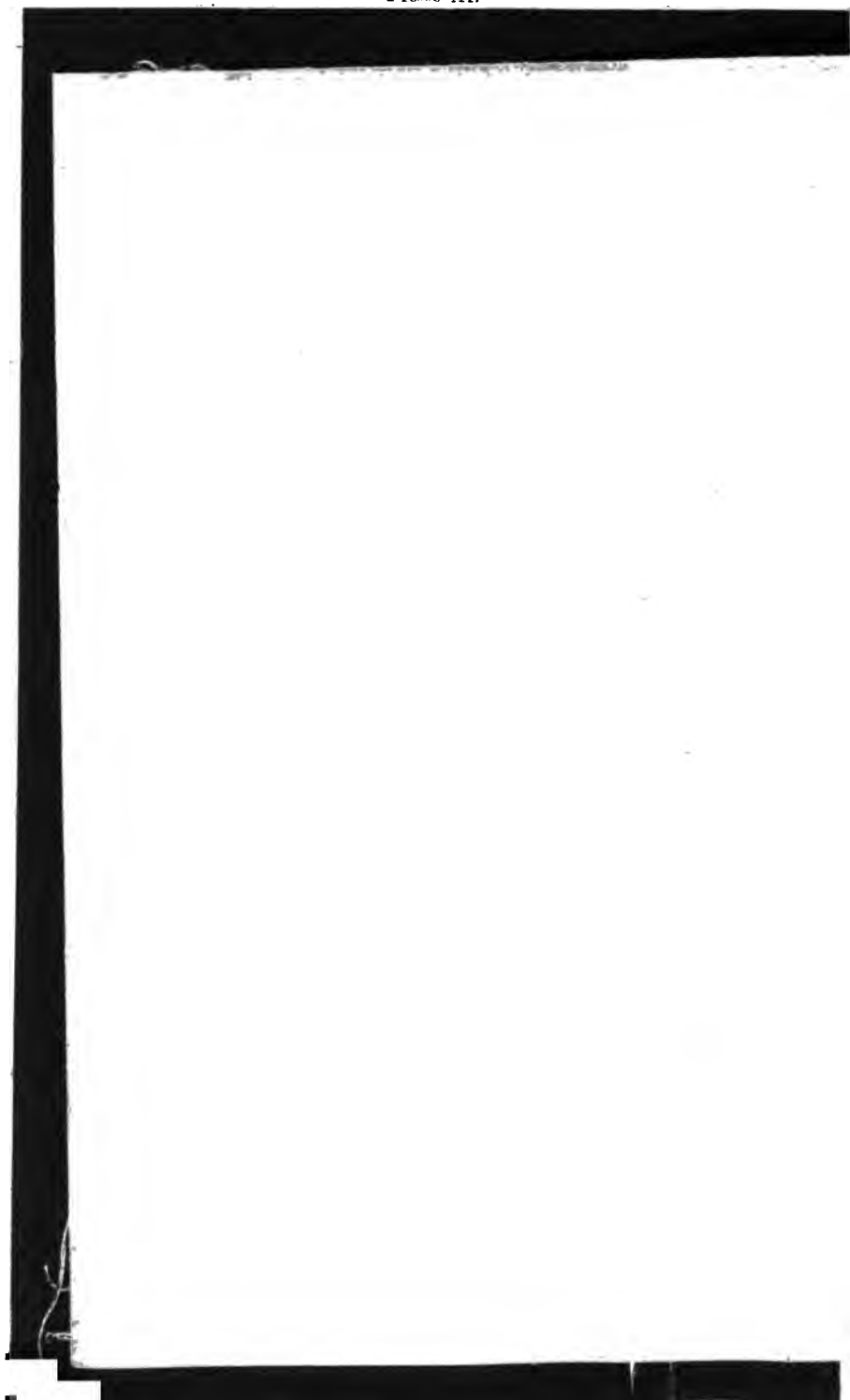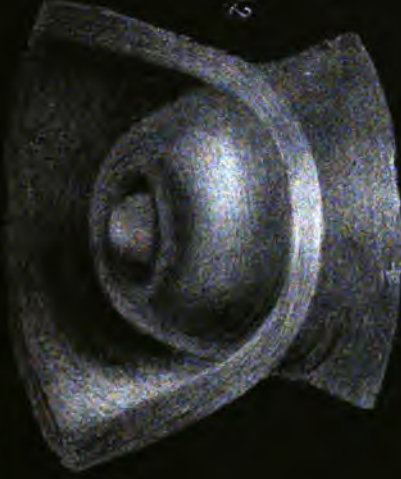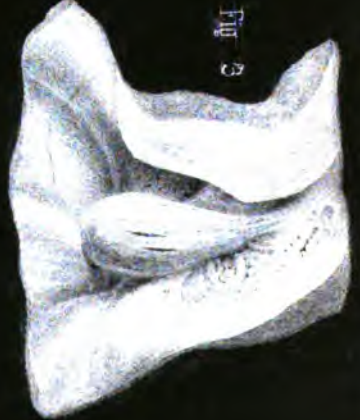
Drawn by a newly discovered method in lithography.

Plate III.

Plate IV

Fig. 1

Fig. 2

Fig. 3

Fig. 4

affixed to its top, of a heart-shaped figure, and intended, first, to receive the two canulæ, with their contained ligatures, and afterwards to serve as a point of resistance during the cutting action of the ligature upon the pedicle of the tumour. The canulæ and ligatures (Fig. 3) are first applied in the same way, and according to the same rules, as those of Niessens and Gooch. After the pedicle is encircled by the ligature, the two lower extremities of the canulæ and included ligatures are passed through the ring (a, Fig. 1) of the second portion of the instrument. This second portion of the instrument is then run up, with its ring surrounding the included canulæ, till it reaches the pedicle of the tumour; the projecting side of the ring being turned towards the pedicle. The canulæ are then slipped off, and withdrawn, leaving the wires or ligatures alone in the terminal ring of the instrument. Subsequently, these wires are twisted around, and fixed upon, the knob (b, Figs. 1 and 2) attached to the screw (Fig. 2). Lastly, by moving the knob downwards, by the operation of the screw, the ligature is made to cut into and through the pedicle.

In the following case, I was enabled to divide the pedicle of a large intra-uterine polypus with a pair of well-curved blunt-pointed scissors.

CASE IX.—The patient was aged 48, and unmarried. About 14 years ago, she was first seized, when in service, with a severe flooding. It returned at short intervals, and reduced her strength so much that she was obliged to leave her situation, and has never been able to take another. The hemorrhage she describes as having been almost constant for many years; that is, there was always some red oozing, and fluid blood and clots often escaped when she made any exertion. She had been treated by various medical gentlemen during this period, chiefly with iron, styptics, and astringents. A vaginal examination had never been made, in order to ascertain the source of the hemorrhage. During last autumn she presented herself for advice, at my house. She was blanched, thin, and debilitated, and scarcely able to walk. On examination per vaginam, the uterus felt enlarged, more particularly in its cervical region. A sponge-tent was introduced, and on her returning, two days afterwards, I found a polypus descended upon the distended os. Dr Ziegler, Mr Carmichael, and Dr Duncan, were present at the removal of the polypus. In order to reach, if possible, with the scissors, the pedicle of the polypus, I required to make a slight incision into the thin lips of the os. I was enabled at last, after some difficulty, and by seizing the polypus with a vulsellum on one of its sides, to turn the polypus laterally, and obtain access, with the scissors, to its pedicle, which was small and easily divided. After the polypus was completely separated, it took no inconsiderable amount of traction to drag it through the os uteri. The polypus was round, of the size of a small orange, and of a fibrous structure. The patient was rendered anæsthetic during the operation. The vagina was plugged with sponge, and the woman sent home. Next day the plug was removed. The patient has ever since kept free from any return of the flooding, and a degree of leucorrhœa, which followed, as often happens, the removal of polypi, is subsiding under the use of medicated pessaries. A month subsequent to the operation, she stated her strength to be greatly improved beyond what it had been for many years.

The preceding remarks, relative to the treatment of intra-uterine polypi, principally refer to these tumours when they happen to be of a

large size. But uterine polypi are often too small to be removed by the knife, scissors, or ligatures ; and yet these small polypi not unfrequently lead to severe and long-continued menorrhagia. From the analogy of hemorrhoidal tumours, we know that the mere size of a polypus is not to be taken as any measure of its capability of producing hemorrhage. Small vesicular, mucous, or cellular polypi sometimes grow from the fundus uteri, giving rise to considerable and long-continued hemorrhagic discharge. I have preserved specimens of them from the dead subject, and have met with them in the living. They can hardly be properly termed polypi, as they are scarcely pediculated at their attachment, and sometimes short, but in other cases long and slender, in their body.

The following case may be cited as an illustration of this form of the disease :—

CASE X.—A lady, the mother of ten children, became irregular in her menstrual discharge during her 44th year. At times it was wanting at the usual monthly periods, at others it amounted to menorrhagia. About a year after this irregularity commenced, such an amount of fluid blood and coagula escaped as at first to lead on her part to some suspicion of miscarriage ; but it continued to go on profusely for two or three weeks. At the end of that time, I visited her, with Mr B. Bell, and Dr Malcolm. On examining the uterus, we found a small vesicular polypus attached to the inner surface of one of the lips of the os, and it was easily removed by avulsion. The discharge, however, was not abated in consequence, as we expected. A series of sponge-tents was then introduced, so as to open up, first, the cavity of the cervix (which was found free from additional polypi), and ultimately the cavity of the body of the uterus. When the distension of the whole uterine cavity was at last completely effected, both Dr Malcolm and I found that we could touch two or three small slender polypoid bodies, hanging from the very fundus of the uterus. I removed them cautiously from the surface to which they were attached, with the nail of the first finger. After this the hemorrhage ceased, but some local treatment was required to cure the ulcerated state of the cervix. The polypi were removed in April. The patient went soon afterwards to spend the summer in the country, where she soon gained strength, and enjoyed much-improved health. I saw her lately. The menorrhagia had not recurred, but she still looked anemic, having never recovered her colour since the hemorrhages in spring.

Dr Malcolm informs me that, since meeting with the above case, he has seen another similar one, and treated it successfully in the same way. I may add, that in several cases of chronic and severe menorrhagia, in which I have been induced to open up the cavity of the uterus with sponge-tents, in order to ascertain whether there was any small intra-uterine polypus present or not, I have merely found the interior of the uterine cavity rough and granulated at particular points, which I have generally tried to remove and scratch off with the nail. Whether owing to their removal or not, or owing to the irritation resulting from the pressure and distension of the sponge, I know not, but certainly in two or three cases, the menorrhagia has subsequently abated and ceased.

By far, however, the most common site for the origin of small vesicular polypi, is the interior of the cervix uteri. In fact, the

small cellular or vesicular form of cervical polypus, is infinitely the most common form of polypous disease of the uterus. Several specimens of them are represented in Plate IV. These cervical vesicular polypi are generally of a small size, like a pea, or orange pip, and vary from this to the size of a hazel nut. Sometimes they are sessile; and sometimes pediculated, as represented in the sketch from Cruveilhier. (Fig. 4). Occasionally they are single (Fig. 3), or they form a single complex cluster; but more frequently they are gregarious, as represented in Madame Boivin's drawing of them, copied in Fig. 1. Indeed it is, I believe, the rule rather than the exception to it, that when we find one (perhaps protruding at the os uteri, as in Fig. 12), we shall find, on further search, that there are others, sometimes to the number of four, five, or six, springing from other points of the interior of the cervix, and not discoverable till the cavity of the cervix is dilated by a sponge-tent. When hanging from the os uteri, their stalk is sometimes so loose and long, and the small depending polypus is itself so small and soft, that it moves away before the finger in making a tactile examination, and one unaccustomed to this peculiarity will not feel perfectly sure of the presence of such a polypus till the speculum is used, when the polypous body will be easily seen generally of a cherry-red, or purplish colour. Such polypi, though small, are often apparently the source of much menorrhagia and leucorrhœa, for they almost always co-exist with, and probably produce, some degree of ulcerative inflammation of the contiguous surface of the cervix[1].

In trying to remove these small vesicular polypi of the cervix, it is, therefore, to be held in recollection, that there are generally more than one present, and that to ascertain this point with any precision, it is necessary to dilate and expand the cavity of the cervix with a sponge-tent.

In more than one instance I have found these polypi (when their pedicles were perhaps long and easily broken) come off, imbedded in the surface and foramina of the sponge, which had torn them off during its expansion. But, in twenty-nine out of thirty cases, more methodic measures are required for their removal,—as scratching them off with a sharp nail, seizing and tearing them off with polypus forceps, or dividing their stalks with a pair of scissors. If we can use the speculum, these modes of removal are greatly facilitated by the sense of sight. Indeed, if we require to use the polypus forceps

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[1] A small cervical polypus may even produce death by the extent of hemorrhage to which it gives rise. In an excellent practical paper on polypi, published by Dr Locock, in the London Medico-Chirurgical Transactions for 1848, he states (p. 171), " Upwards of twenty years ago, the late Dr Robert Hooper showed me a preparation of a uterus, laid open, having a polypus not larger than a pea, with a short and narrow peduncle attached within the cervix, high up, considerably within the os uteri, and not perceptible till the cervix was slit open. All the history which he could give me was, that the uterus was removed from the body of a young woman, who had died in the Marylebone Infirmary, from long-continued uterine hemorrhage."

or scissors, for the removal of these small polypi, and guided by touch alone, we will generally find the operation, though apparently simple in principle, one which is tedious and difficult to perform in practice.

In a considerable number of instances of obstinate slight menorrhagia and leucorrhœa, I have been enabled to detect the presence of vesicular polypi attached to the interior of the walls of the cervix uteri, by opening up the cavity of the os and cervix with sponge-tents, and have afterwards removed them by the methods alluded to. The following was one of the first instances in which I pursued this practice :—

CASE XI.—A lady was confined of a premature child in early married life, and afterwards her health remained broken and wretched. She did not again conceive; and was unable to take walking exercise. There was a constant feeling of dragging and pressure about the pelvis. Betimes menorrhagia, and some degree of leucorrhœa, supervened. She was seen by many medical men in different parts of Europe. It was generally considered that there was a tumour on the back wall of the uterus; and for some years previous to my first seeing her, in 1842, she had been undergoing a course of local leeching, and other treatment, under the idea that the enlargement of the uterus was hypertrophic, and that her irregular menstruation was the result of congestion. I found the apparent tumour or hypertrophy of the uterus was formed by a complete retroversion of the organ. The cervix uteri was ulcerated, and I thought I could touch a small vesicular polypus, on pressing my finger against the os. I distended the cervical cavity with a sponge-tent ; and, on removing it next day, I was easily able to trace three or four small cystic polypi attached to the interior of the cervix. I removed them, by picking each individual polypus carefully off with small forceps. An amelioration in the irregular menstruation immediately followed ; and other means were subsquently adopted for the treatment of the other complications.

The small vesicular polypi of the cervix have sometimes, as we have already seen, long pedicles.[1] Occasionally, however, we find, co-existing with these pediculated polypi, others that are non-pediculated or sessile ; and, occasionally after the cervix is dilated, we find others not raised yet above the level of the general surface of the mucous membrane of the part, but feeling imbedded like shot or peas in or beneath that membrane. In other words, we find, in some cases, these vesicular polypi in all their stages of formation, from small shut cysts, up to pediculated vesicular tumours. When such is the state of matters, we can only remove those that are more fully formed, by the nails, scissors, or forceps. To effect a complete cure, we require other means; and for this purpose the application of caustics to the mucous membrane of the cervix answers every indication.

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[1] Plate IV. contains four drawings of polypi of the cervix uteri. In Fig 2 is seen, projecting from the os uteri, a pisiform cystic polypus. Fig. 1. shows the same uterus opened up, and three small cystic polypi on the walls of the cervix. These two figures are copied from Figs. 1 and 2, of Plate XVIII., of the work of Madame Boivin, " on Diseases of the Uterus." Fig. 3 is taken from a plate appended to a paper by Dr Lee, in the nineteenth volume of the " London Medico-Chirurgical Transactions." Fig. 4 is copied from Fig. I. of Plate VI. of Fasciculus XIII., in Cruveilhier's plates of Pathological Anatomy. It shows some small pediculated polypi of the cervix uteri. Here, as often happens, there was co-existent disease in the body and fundus of the uterus.

Nitrate of silver generally proves too weak for this purpose, unless repeated very often, and combined with scarification of the mucous surface. We possess a far more potent and certain caustic for the purpose, and one that is perfectly manageable, in potassa fusa. The surface of the os and cervix, when small vesicular polypi exist, are often found to be the seat of chronic inflammatory ulceration ; and sometimes the submucous tissue, and the structure of the cervix, is also the seat of chronic inflammatory hypertrophy and induration. When such a combination exists, the potassa fusa is doubly useful, as its application at once destroys the polypi, and sets up a new and healthy action in the affected and morbid tissues of the cervix. I have described, elsewhere, its great value and mode of application in inflammatory induration of the cervix,[1] and the power we have of immediately arresting and limiting its action by the neutralising effects of acetic acid. I need only add here, that I have now repeatedly found this caustic of the greatest possible use in obstinate and complicated cases of vesicular polypi of the cervix, such as I have above alluded to. In illustration of its effects, I shall cite only one instance, and that because it was a case which was peculiar in several respects.

Case XII.—On the 1st October last, I was called into Roxburghshire, by Dr Anderson of Jedburgh, to see a lady who had been losing large quantities of blood for three weeks previously, and the hemorrhage had continued to go on profusely, day after day, in despite of all the means which he had tried for its suppression. The patient's strength had, in consequence, become greatly exhausted. She was between forty and fifty years of age ; was the mother of a family, and for some years past had suffered under occasional menorrhagia. Three years ago, a uterine polypus had been detected at Brussels, and afterwards removed in London, apparently with some difficulty, as the first physician who attempted it, failed. Her present attack of hemorrhage was much more long-continued and severe than those that had occurred previously. Before being able to make a tactile examination of the uterus, I had to remove several large clots of blood lying in the vagina. I found the anterior lip of the os uteri very much enlarged, indurated, and roughened on the surface. By the speculum we saw this lip greatly enlarged, and dotted over with small pediculated red-coloured polypi like red currants ; and the use of the mop showed them to be the source of the flooding. About a dozen of these small red polypi were within the field of the speculum, but others could be felt on the internal aspect of the enlarged lip. As it seemed hopeless to attempt to detach them all one after another by the forceps, and as doing so would not remove the suspiciously indurated and enlarged anterior lip of the cervix, I at once had recourse to the application of potassa fusa to the diseased lip itself, and melted it down, with the polypi attached, by decomposing upon it a couple of sticks of potassa, of above an inch in length each, and followed this immediately by the free and abundant injection of vinegar to neutralise the alkali. Subsequently, under the use of astringent injections and medicated pessaries, the surface took on a healthy cicatrisation, and her health greatly improved under Dr Anderson's kind and able care. I saw the patient in Edinburgh two months afterwards, on her way home to London. There were no remains of the induration or polypi. The uterus felt natural in size, and the surface of the cervix was entirely cicatrised. There has been no recurrence of the menorrhagia. The menses have been present once, but not in unnatural quantity.

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[1] Monthly Journal of Medical Science for 1847-8, p. 71.

ARTICLE III.—*Cases of Disease of the Chest, involving Effusion into the Pleura, and some Difficulties of Diagnosis.* By H. M. HUGHES, M.D., Assistant-Physician to Guy's Hospital.

CASE I.—*Pleuritic Effusion—Probable malignant Disease, Paracentesis Thoracis—Death from other Causes—No Inspection.*—(From notes by Mr Kingsford.)

THOMAS H——, aged eighteen, a tall thin youth, was admitted into Spare ward, under my care, April 25, 1849. Born in Kent, and belonging to a healthy family, he had not suffered from any material illness till the commencement of the present attack, which he dated as far back as April 1848, when, while walking to his occupation, as clerk to a wine merchant in the city, from Kennington, he got wet through, and sat all day without changing his clothes. The next day he had a slight febrile attack, which confined him to the house for a few days. From this time he had never been so well as before, and had been constantly liable to colds and febrile attacks, from such slight exposures as previously would not have affected him.

Three months ago, he suffered from difficulty of breathing, and pain in the right side, for which he saw a medical man and a physician, in a country place, to which he had been removed for change of air, and where, though he took large quantities of food, with much exercise in the open air, he still continued to get thin. He applied among my morning patients, about two months before admission into the hospital, and was then suffering from obvious effusion into the right pleura, which was already of a chronic character. This effusion was gradually but satisfactorily removed by blisters, mercurials, and diuretics; but left behind it a very grating and extensive pleuritic rubbing in the whole of the lower part of the side. Notwithstanding his apparent recovery, he did not gain flesh, and, about ten days after he had ceased to attend me, he applied to me again, suffering from pain in, and obvious effusion into, the *left* pleura. This was treated by similar remedies, but, unfortunately, not with similar success. The effusion continued to increase, and his flesh and power continued to diminish, so that, as a means of temporary relief, he was advised to go into the hospital, for the purpose of having some of the fluid removed by operation. Upon admission, the physical signs were as follows:—The chest was far from symetrical, the left side being considerably larger and more bulging than the right (perhaps dependent, in some measure, upon contraction of the latter); the intercostal spaces were upon a level with the ribs, and an obscure sense of fluctuation was perceptible between the ribs, from the fifth to the tenth inclusive. The left parietes were not raised upon inspiration; and dulness upon percussion existed over the entire side, both before and behind. No respiratory murmur was audible, but tubular breathing was feebly heard throughout. The voice to the ear was increased in shrillness, but tactile vibration was absent. The heart was considerably displaced, its impulse being entirely, and its sounds being principally, perceptible behind the sternum. The spleen also was displaced, and could be distinctly felt low down in the left hypochondrium. Upon the right side, the ribs moved with tolerable freedom, and little that was morbid could be discovered, excepting a slight pleuritic rubbing—the last lingering remains of the attack upon that side. The liver was much enlarged, extending downwards to within an inch, or inch-and-a-half, of the umbilicus. The pulse was small and feeble; the tongue moist and clean, but rather injected; the bowels were relieved daily; the appetite was good; the urine acid, and not coagulable by heat or nitric acid. He complained of no pain, and slept tolerably well. He was ordered Potass. Iodidi, gr. ij., Liq. Potass. m. x., ex Decoct. Cinchon., bis die; Ung. Hydrarg., Fort Ʒj.; Potass. Iodidi, gr. v.; M. Fᵗ. Ung.—nocte maneque femoribus infricand.

April 26.—Mr Cock, after a preliminary exploration, and the certification of

the presence of fluid, introduced a small trochar between the ninth and tenth ribs, about two-and-a-half inches from their angles. Twenty-four ounces of clear straw-coloured fluid were withdrawn, when, from the patient feeling faint, it was thought desirable to close the opening, and to apply the ordinary compress and bandage.

April 27.—He had passed a good night, and felt very much relieved, but had suffered from slight cough. Resonance upon percussion now existed upon the anterior of the chest, as low as the fourth rib. The fluid drawn off separated into a large clear clot, and surrounding serum, which became nearly solid upon the application of heat. The heart had partially returned to its normal position.

April 30.—The cough, which had been previously troublesome, was now less. He sat up yesterday afternoon, and proposed to do so this day. He was, however, sadly emaciated. The chest was now resonant as low as the sixth rib, and some respiratory murmur was audible posteriorly.

May 1.—He complained again of cough, and expectorated some frothy mucus. Ordered Empl. Lyttæ, lateri sinistro.

May 2.—Had a bad night from his troublesome cough. From the considerably increased resonance upon percussion, extending as low as the ninth or tenth rib, it was feared that some air had escaped into the pleura ; and that, as no other evidence existed of pneumothorax from communication with the lungs, the air might have its origin from communication with the stomach or intestines, as there was too much reason to fear he had serious abdominal disease, which was probably of a malignant nature. Ordered Pulv. Ipecac. c. gr. v.; Hydrarg., c. Creta. gr. iij. ; Ft. pulv. quaque nocte sumend.; Capt. Pulv. Jalap, c. Ɔij. Statim. Pergat.

May 3.—Had much greater debility, and passed a bad night, with muttering. Ordered Vin. Rubri. ℥iv.

Nothing remarkable occurred till May 5, when there appeared a sudden prostration of power, with great distention and pain of the abdomen, coldness of the surface, loss of pulse, and clammy perspiration, under which he sank, between 7 and 8 P.M.

It was particularly vexatious that no inspection was made of this very interesting case, more especially as it was afterwards ascertained that the friends, so far from objecting, would have been pleased that the body should have been examined. The exact nature of the malady upon which the pleuritic effusion, first into the right and then into the left side, depended, cannot, of course, be positively decided under these circumstances. It must be in a great measure conjectural. A review of the whole case, including its history and progress, will perhaps tend to support the belief, that some grave malady existed in the abdomen, as well as in the thorax, and that of this malady the pleuritic effusion was the consequence. Among the circumstances which may be mentioned in support of the opinion referred to, may be noticed, 1st, the slow and insidious approach and progress of the disease in the left side ; 2d, the constant emaciation of the patient during many months, although the appetite was good and even great, and although no cough, or any prominent or obvious cause, existed to account for it; 3d, the incomplete cure of the complaint upon the right side, together with the fact of effusion taking place upon the left side, almost directly that on the right had been materially diminished; 4th, the resistance of this effusion into the left side to all remedies, external and internal, although the functions

were, in the main, fairly performed, and the constitutional disturb-
ance was small; 5th, the great distension of the abdomen, and im-
mense enlargement of the liver, without the evidence of any disease
of the heart, or any very great obstruction to the respiration, the
comparative slightness of which was probably dependent upon the
very gradual accumulation of the fluid; 6th, the very remarkable
resonance upon the left side of the chest, which appeared some days
before death, the exact nature of which, it is true, could not be de-
cided, in consequence of the severe distress then existing, but which
was determined not to be dependent upon, or rather not to have
been accompanied by, the physical signs of pneumothorax, resulting
from ulceration or laceration of the pleura; and finally, the sudden
prostration and collapse, with distension of the abdomen, accom-
panied with pain, leading to the probable presumption of the per-
foration of some hollow viscus. All these circumstances tended to
support the opinion, that the original malady—the "fons et origo
mali"—had been some grave local disease, of a constitutional cha-
racter, and that the double pleuritic effusion was the consequence of
that disease. As to the effect of the operation of paracentesis tho-
racis, I believe it to have been, as indeed it was proposed to be,
simply palliative. I am not sure that it delayed the fatal result;
but I have no conception that it had any effect in hastening it;
while it materially contributed to the comfort of the poor boy during
the few subsequent days of his life.

CASE II.—*Tumour of the left side of the Chest—Hydrothorax (?)—Inspection.*
(From notes by Mr Kingsford.)

P. F., aged fifty, a farmer's labourer, of healthy appearance, rather florid
complexion, and rather short stature, was admitted into Guy's Hospital under
my care, May 9, 1849.

He stated, that he had always enjoyed good health till nine months since,
excepting the consequences of an accident twenty-six years ago, when a horse,
which he was leading, plunged, and pressed him against a wooden railing,
whereby he was struck upon the ninth and tenth ribs of the left side near their
angles, and severely squeezed in the left hypochondrium. This at the time
produced acute pain, which continued with greater or less severity for about a
month, but was not sufficiently urgent to prevent him from following his or-
dinary occupation, although he had ever since occasionally felt shooting pains
about the same part of the side. For the last nine months, however, he had
suffered continued pain in that region—pain which was increased by stooping
and by coughing; he had also gradually, for the same period, but especially
during the last three months, lost much flesh. His father died at a good old
age, but he lost his mother at the age of fifty-six from an asthmatic complaint.
His brothers and sisters were at the time healthy and strong. Mr Ray of
Dulwich, under whose care he had been for the last three weeks, had applied
blisters and administered medicines without obvious benefit, and sent him up
to my house for my opinion upon the nature of the case. I sent him word by
note, that though many of the circumstances of the case resembled those of
pleuritic effusion, yet, from the history, and from the physical signs about to
be detailed, I believed the patient to be suffering from tumour of the left side
of the chest.

Upon admission, he had no constitutional symptoms of any importance; he
ate and drank, and when free from pain, slept well; the breathing was not

hurried ; the tongue was pale, clean, expanded, and indented by the teeth ; the pulse seventy-six, feeble, and easily compressed. He complained of being unable to lie upon either side, in consequence of the pain thereby induced ; and also of burning heat in the palms of his hands and soles of his feet. The urine was loaded with lithates, not clouded by boiling, acid, and of specific gravity 1·030.

Physical Signs.—The chest was generally well-formed, but, notwithstanding, seemed to be unsymmetrical, being in appearance (but in appearance only, as upon admeasurement the sides proved to be equal in size) larger upon the left side. The left side was imperfectly raised upon inspiration, and the tape encircling the chest slipped to a less extent when the ribs were elevated upon this than upon the right side. Dulness upon percussion existed in front as high as the fifth rib, and below the spine of the scapula posteriorly. Up to the same line there was a total absence of respiratory murmur ; the vibratory thrill was almost entirely lost before, and it was not at all appreciable behind. The voice in the parts affected was rather less audible than in the healthy state. The intercostal spaces were not bulging, or even level with the ribs, but appeared to be slightly less distinctly marked than upon the right side. The heart was evidently displaced, the impulse being lost below the left nipple, and the sounds being most distinctly heard behind the sternum, where the impulse appeared to be considerable, and where a slight double bellows' murmur, or " see-saw " sound, was audible. The right side of the chest presented nothing abnormal, excepting a little puerile respiration at some parts, which was also heard without any bronchial character in the uppermost part of the left side. A small tumour was to be felt in the left hypochondrium, nearly in the situation of, and apparently about the size of, the spleen, but it was more moveable, and more distinctly defined, than that organ is in its healthy state and in its normal situation. Ordered Liq. Potass. m. xx. in a draught of porter, three times a-day.

May 21.—He had more severe pain, but slept well, and was ordered Empl. Belladonnæ, and as he did not like his medicine in his porter, Liq. Potass. m.xv.; Potass. Iodidi, gr. ij. ; Inf. Aurantii, ℥i., ter die sumend. Porter as before.

May 24.—Many persons had examined this man, and various opinions had been expressed in reference to the disease, the general impression being, that it was simple pleuritic effusion. My own opinion, as well as that of Mr Ray, was, and ever had been, that it was tumour, though this might possibly be accompanied with a certain amount of pleuritic effusion or of hydrothorax. The probability of this complication was slightly supported by a supposed difference in the extent and degree of dulness posteriorly, when the patient lay upon his stomach, and when he sat up in bed. It was thought, therefore, desirable to give him the benefit of the doubt, and to endeavour, at any rate, to remove the supplementary fluid, if any existed. He was consequently ordered Empl. Lyttæ magnum. lateri sinistro applicand., Hydrargi. c. Creta, gr. ij., nocte maneque sumend., and to continue his mixture.

May 24.—The blister rose well, and discharged an abundance of serum, and he expressed himself relieved. The tumour in the left hypochondrium was now believed to be the displaced and moveable spleen, as its free edge could be distinguished. His functions were performed naturally, and his appetite had improved. Pergat.

May 31.—The pain being relieved by the blister at the part to which it was applied, but remaining anteriorly, another was ordered to the part now affected. He now, however, complained of a deep-seated dragging when he lay upon his right side. The heart was not so much displaced as upon his admission ; the bellows' murmur heard over the sternum was not so distinct, and a very little pleuritic rubbing was audible between the third and fourth ribs, all of which were considered as favourable circumstances. Pergat.

June 2.—Gums slightly affected by mercury ; pain still severe ; dulness on

percussion persistent, and unchanged both in extent and in degree. Ordered Empl. Belladon. Pergat.

June 11.—Ordered to be dry cupped.

June 12.—Relieved by the cupping. He had a better night after it than for two weeks before.

June 18.—The pain had returned, and was as acute as before; the dulness upon percussion was less in degree, but not in extent ; and the heart had decidedly moved a little to the left, being now more distinctly heard to the left of the sternum than in the mesian line. Functions normal. Applicet'. Empl. Lyttæ parti dolent. et Pergat.

June 23.—Owing to some family affairs, he expressed a wish to return home. He was consequently " presented," but advised to continue the mercurial, under the eye of Mr Ray.

I saw this gentleman some weeks after, when he told me that the patient was fast sinking,—the emaciation increasing, and the tumour now obvious to the sight and touch.

He died about September 7th, ten weeks after leaving the hospital, and was examined by Mr English, of Denmark Hill, who sent to Mr Ray the following statement, with which that gentleman has been so polite as to favour me :—

" The post-mortem appearances were extreme emaciation, with a marked difference in the sides of the chest, the left being the larger. On raising the sternum, I found the heart lying beneath the right side of that bone, the apex still farther to the right. The pericardium was attached to the heart (with the exception of a few points) throughout its whole extent. The heart itself was small, but quite healthy ; the right lung was also healthy. On the left side of the chest was a firm elastic tumour, reaching from the clavicle down into the abdominal cavity as far as the lower margin of the last rib. The spleen and left kidney were partially displaced by it ; yet there was no disease of any of the abdominal viscera. The anterior surface of the tumour was free from attachment, with the exception of the adhesion of the pericardium. The diaphragm was carried downward, and formed the covering of the lower part of it. On passing the hand between the tumour and the ribs, I found it adherent to the third, fourth, and fifth ribs, at their greatest concavity, and so intimate was the attachment, that it required all my force to separate them. At this part the bones were denuded, and gave the feeling of necrosis. This and the diaphragm were the only parts I had to divide, when the mass turned out. I then found the left lung almost obliterated. It occupied a space of about three inches in length and one in breadth at the upper and posterior part of the chest. I had not time to examine the tumour ; but the impression I had was, that this morbid mass had originated at the point of attachment to the ribs, and so made a serous covering for itself by carrying the pleura costalis in front of it. I shall be glad to hear the result of your examination."

Mr Ray subsequently informed me that the tumour weighed seven pounds ; that it had obviously been firmly connected with, if it had not arisen from, the ribs ; that it was entirely behind the pleura, being covered by a double layer of the membrane ; and that there can be no doubt whatever of the malignant nature of the mass, though, in consequence of its far advanced decomposition, when, upon his return from a tour, it came into his hands, he was unable to submit it to the microscopic test.

This case appears to me to present features of interest, as well in its history as in its diagnosis,—the former of which had a most important bearing upon the latter. It appears at least probable, that the disease originated in an injury received twenty-six years before ; and that though he had occasionally suffered from pains in the part, the patient had not been seriously inconvenienced till about

one year before his death. The mere fact of this injury having occurred at the part affected, though twenty-six years before, would, in other cases as it did in this, lead me to doubt as to the exact nature of any disease then existing, and thence arising; upon the supposition, that the disease was not characterised by obvious, definite, and well-marked symptoms, together with a corresponding history of any recent and acute complaint. It may be acknowledged, it is true, that this patient had many of the symptoms of pleuritic effusion, but those symptoms were in some respects defective, and, as I believe, in others inconsistent with the assumption, that the disease was fluid effusion, and that alone.

It is also true, that effusion not unfrequently occurs, and even of an inflammatory character, with little pain; and that he who regards an acute, sharp, or pungent pain as the universal attendant of the fluid effused from pleurisy, in contradistinction to that of hydrothorax, will, in practice, find himself occasionally mistaken.

Yet it remains true that a "stitch in the side" is the common preliminary or attendant of acute pleurisy. It is, moreover, true, that this man had suffered pain and for a period of nine months, but this very fact induced me to believe that the complaint was not originally pleurisy: first, because the pain was not sudden and acute; and secondly, because it was continuous,—simple pleuritic effusion, of some months' standing, being, according to my experience, unaccompanied by pain. Confirmatory of the doubts in one respect, and of the opinions upon the other, was the dislocation of the heart. This occurs, as is well known, in effusion, and in a marked degree; but I felt assured that in this case the dislocation or removal of the central organ of the circulation was greater than could be accounted for by the amount of effusion into the pleura, supposing such to have existed. Then there was present the murmur of the aorta, which remained to be explained; and which, supposing it to have arisen from aortic disease, might possibly have accounted for the effusion, independently of the pleurisy. But neither the general symptoms, the history, nor the pulse of the patient, supported the notion of any real disease of the aorta; while the murmur might be satisfactorily accounted for by the removal of the heart in one particular direction, consequent angular curvature of the aorta, and obstruction to the progress and reflux of the blood; or, perhaps, with even greater probability, by the pressure of a portion of the tumour upon the ascending aorta. It was proposed by those who believed that the disease was effusion alone, that the exploring needle should be employed to decide the question; and in support of the proposal, it was urged that even if it were a malignant tumour, the puncture would effect no injury. Feeling, however, in my own mind, assured that the disease was a solid tumour, and probably malignant, though it might possibly be accompanied with effusion, and having also seen, or fancied that I had seen, injury to result from interfering, however

slightly, with malignant growths, I thought it better to leave it un-
touched as regarded mechanical means, and to trust alone to the
operation of internal remedies, being convinced that in a short space
of time the diagnosis would be decided by the death of the patient.
I had no cause to regret my determination, as I think the explora-
tory puncture could have done no good, and might have induced
increased activity in the growth of the tumour, and thereby hastened
the death of the patient.

CASE III.—*Enlarged Absorbent Glands—Tumours in the Lung—Consequent
    Hydrothorax—Ascites, Anasarca, and Sudden Death—Inspection.*

E. L., aged thirty-seven, was admitted into Guy's Hospital, under my care,
September 26, 1846. He was tall, with a rather large frame, of light com-
plexion—by occupation a compositor, and had worked hard—was married, and
the father of a family. He had presented himself among the out-patients on
the preceding Friday, and had been directed to apply upon the next admission-
day. On both occasions he walked to the hospital from his residence, in East
Lane, Walworth. He stated that for six months he had been troubled with
more or less dyspnœa, but had not observed any swelling of his body or legs,
till two weeks since. Upon admission, his face was pale, and he had great
dyspnœa upon exertion or talking, and he was unable to lie down in his bed ;
—his abdomen was large, and fluctuation in it was distinct ; the legs were
much swollen from œdema ; he made much moaning noise during sleep ; the
pulse was frequent and feeble ; the tongue pale, clean, and moist ; the bowels
open ; the appetite good ; the skin pallid, but natural in temperature. There
existed no evidence of any disease of the heart, though, synchronously with its
contraction, there was occasionally heard a rubbing sound, which it was sup-
posed might depend upon a roughened pleura. The chest was generally dull
upon percussion ; but this dulness was particularly marked at the base of the
chest posteriorly, and especially upon the right side, wherein tubular breath-
ing and ægophonic bronchophony were distinctly audible. Both of these signs,
however, disappeared, and the posterior part of the chest became moderately
resonant upon percussion, when the patient lay upon his face. The ribs were
imperfectly raised during inspiration, and anteriorly various sonorous rhonchi
were audible upon auscultation, indicative of bronchial obstruction. The liver
could be felt enlarged and projecting considerably below the ribs. In the neck,
above the clavicles, and in both axillæ, were masses of diseased absorbent
glands, as large as full-sized oranges. He was at first ordered Ferri. Iodidi, gr.
iss., ex. Mixt. Iodini. c. (composed of iodine and iodide of potassium), thrice
daily, together with good diet,—but on the 16th was prescribed, Potassæ Bi-
carb. gr. xv., Liq. Potassæ, m. x. ex. Decoct. Cinchonæ, and, upon October
6th, cod-liver oil ℥ss. three times a day,—a large blister to the right side, and
compd. jalap powder, ℈ij. every other morning.
    Under this treatment the œdema of the legs disappeared ; the abdominal fluid
greatly diminished, and the enlarged glands decreased remarkably in size. As
to the fluid in the chest, it varied considerably in quantity, but the dulness,
bronchophony, and tubular breathing were never absent ; the patient was al-
ways affected with dyspnœa,—decubitus was always impracticable, and he always
moaned much during sleep. The urine was high-coloured, small in quantity,
loaded with lithates, and uncoagulable by either heat or nitric acid : at the
same time he constantly got weaker and thinner. On the 30th of the month
he was ordered, and derived great comfort from, a composing draught, contain-
ing laudanum and æther in camphor mixture,—and about this time the catheter
was introduced in consequence of some difficulty in micturition. On the 31st,

in consequence of increased dyspnœa, the powder was increased to ʒj., and Potassii Iodidi, gr. ij., Potassæ Tartrat. gr. xv., Liq. Potassæ;℥m. xv. ex., Inf. Gentienæ, c., was prescribed three times a-day, and, upon November 3rd, Pulv. Elaterii, c. gr. v. (containing one-sixth of a grain of elaterium), was ordered to be taken every morning.   On Sunday, November 7th, he proposed to leave the hospital, and on the 8th he talked seriously to his mother of his condition —but in the evening, after she had left the ward, he composed himself quietly to sleep.   From this sleep he never awoke, as he expired at 8 P.M. on the same evening, without a struggle.

Inspectio Cadaveris, seventeen hours after death.—The head was not examined. Chest.—Both mediastina contained clusters of enlarged absorbent glands, pressing more or less upon the large bronchi and primitive vessels of the heart. They varied in size from a marble to a pullet's egg—were in the main firm and translucent, in some few parts opaque and cheesy, but more commonly white, elastic, very hard, and semi-cartilaginous—"crying " (to use a French term) under the scalpel when incised.   A doubt existed as to their character, whether they were scrofulous or malignant ; a doubt which was not removed by the microscope, employed by those competent to judge, and which was left by that instrument much " *in statu quo.*"   Both pleuræ contained some pints of clear colourless serum, with a very few and very delicate membraneous bands. Both lungs were in consequence firm from compression, and of dark colour.   They contained no scrofulous tubercles, but posteriorly and inferiorly enclosed several nearly globular masses, varying in size from a swan-shot to that of a large marble, presenting the same general character as the mediastinal glands, but being, upon the whole, more opaque and friable, and in one instance softened down to a cream-like fluid.   They were enveloped in a firm dark covering of condensed pulmonary tissue, which contained much black pulmonary matter. The pericardium contained several ounces of clear colourless serum, and was itself very much thickened.   The heart was rather flabby, but otherwise healthy.   The liver was large, weighing 6lbs., but healthy.   The spleen was curiously nodulated by tumours ; but they were not white, as in the lungs, but parti-coloured, or variegated with red and white.   The pancreas was healthy, but the glands surrounding it, as well as those about the iliac veins, were much enlarged, and presented the same general character as those of the mediastina. The mesenteric glands were natural, and the kidneys large, but healthy.

As the exact nature and origin of the disease in this case will always admit of doubt, I forbear any remarks, excepting in reference to the alteration of the state of the chest from the prone or supine position of the patient.   From the condition of the sufferer, this test of the nature of disease can rarely be applied in genuine hydro- thorax, but it is one which, when it can be tried, is often sufficient to distinguish hydrothorax, not merely from disease of the lung, or solid disease of the pleuro, but from pleuritic effusion itself; as in this latter complaint the effusion is not unfrequently confined by adhesions, or prevented from gravitating by its gelatinous consistence, or from its being suspended in the meshes of fibrine which accompany it. In the case above related, the test was perfect, and its application tended materially to confirm the belief that the effusion was passive, and that it was produced by internal disease of the same form and nature as that which existed externally in the neck and axilla.

(*To be continued.*)

ARTICLE IV.—*Contributions to the Pathology of the Heart.* By
A. HALLIDAY DOUGLAS, M.D., Fellow of the Royal College
of Physicians, Physician to the Royal Infirmary, Lecturer on
Clinical Medicine, Edinburgh.—(*Continued from p.*1206, vol. ix.)

IN further illustration of this subject, I shall state, in a general way,
the leading facts of sixteen cases, in which one or more of the ori-
fices were contracted.

The early age at which the disease existed in many of these cases
is worthy of special notice.   In only one case was the patient above
the age of 50 ; in two, the patients were about 40 ; in three, about
30 ; while in ten the symptoms of heart disease were manifested
about or previous to the time of puberty.   All of these ten patients
were under the age of 20 ; five of them were under 15.

The influence of the sex cannot be inferred from so small a num-
ber of cases, but there was a preponderance of females—eleven out
of sixteen.

The general progress, and the mode of death, may be stated as
follows :—

Three cases are known to be still alive.   They have laboured
under the manifested effects of diseased heart, two of them for five
years, and one for two ; they are under the age of 15 ; they
present the signs of a considerable hypertrophy ; and, with rest
and care, they enjoy long intervals of moderate health and com-
fort.   Paroxysms of dyspnœa, with palpitation and angina, occur
but rarely ; and one of them is liable to severe attacks of catarrh,
chiefly in winter, and after exposure.   They are, without exception,
indisposed to the activity which is usual in early life.

Of the remaining cases, three have been lost sight of, and ten
are known to have proved fatal.   In two of these the symp-
toms of the fatal attack were not directly referable to the disease of
the heart ;—one died with the symptoms of chronic disease of the
brain ; she was exhausted by long-continued menorrhagia, which
appeared to depend upon organic disease of the uterus, but which
was, I believe, aggravated by the disease of the heart ; the other
case died, exhausted with the symptoms of phlebitis, and diffused in-
flammation of the cellular tissue of the neck ; she had general
chronic bronchitis, and granular disease of the kidneys.   In eight
cases, the symptoms of the fatal illness were directly referable to the
circulation.   In three of these, death was sudden ; the other five
cases terminated, some of them by a rapid dissolution, some more
gradually with apnœa, and the symptoms we have seen reason to
associate with a preponderating dilatation.   Dyspnœa existed in
every case ; dropsy was distinct only in three ; angina pectoris was
decided and troublesome only in one case.   Of the cases suddenly
fatal, two have been recorded. (X. and XI.)   The third died by
syncope ; she had been delivered two days previously, and had had

considerable hemorrhage; the fatal syncope was induced by rising from bed.

The influence of the different forms of heart disease on pregnancy, and on the results of delivery, is of practical importance, and requires investigation. The case of a woman, in the middle period of life, has just been brought under my notice. She is in the fifth month of pregnancy, and has suffered much of late from palpitation, cough, and hæmoptysis. There are the signs of hypertrophy, with dilatation, and contracted mitral orifice; the *fremitus* at the apex is well marked. Her medical attendant is of opinion that her disease existed at the date of her last pregnancy.

A review of the complications which accompanied these cases will throw additional light on the history of this form of disease; they involved chiefly the brain, lungs, or the heart itself.

Cerebral complications, so frequent in the course of diseases of the heart, occurred in only four of our sixteen cases. Two of these proved fatal, and one is known to be still alive. One of the fatal cases is reported at page 1200, vol. ix. (Case X.), and was a well-marked example of apoplexy proving rapidly fatal. The other case, already referred to (page 30) in explaining the mode of death in these cases, was as follows :—

CASE XII.—Margaret Mackay, æt. 27, of spare and delicate frame, was admitted, 5th May 1846, on account of profuse menorrhagia ; she was much exhausted. She did not suffer from symptoms directly referable to the heart affection, except slight substernal pain ; the signs of cardiac disease were, however, well marked.

About four weeks before death incomplete hemiplegia appeared ; it was slight at first, but steadily increased, and was uninfluenced by treatment. Latterly there was superadded a weak and childish state of mind, and wandering delirium.

The general character of the symptoms was, probably, in a great measure owing to the exhausted state of the system, from the uterine hemorrhage. There was no material hypertrophy of the heart, and no appreciable organic lesion of the brain existed.

In the other two cases, with cerebral complication, there were signs of extreme hypertrophy of the heart, contracted and incompetent mitral valve, and, in one, incompetent aortic valves. In the case with incompetent aortic valves, the cerebral symptoms consisted of incomplete amaurosis, and paralytic feebleness of the extremities of the left side. This man was lost sight of after he left the hospital. The second of these two cases, known to be alive, is referred to at page 30. He is about the age of 16 ; he has laboured under cardiac symptoms for five or six years, but enjoys good health, though he is subject to occasional attacks of catarrh. He is a boy of great intelligence. His paralytic seizure was sudden, apoplectic, and occurred about two years ago; and the power of his limbs is

much and permanently impaired. The signs of hypertrophy of the heart are well-marked.

Thoracic complications were more frequent. The existence of some of these could be determined during life; others could be ascertained to exist only after death. Chronic bronchitis existed in eight of our sixteen patients; but was troublesome only in six, and was complicated in some of these with chronic pleurisy. With one exception, the bronchitis was less remarkable for its permanence than for the acute paroxysmal attacks which occurred, usually after exposure; and it was generally accompanied by cardiac distress. In the intervals of the attacks the patients had perfect freedom from cough, and the signs of bronchitis nearly ceased, except in two cases, in which the bronchitis was more permanent. The facts of these cases do not, to my mind, prove a very manifest relation between the cardiac and this pulmonary lesion.

Pulmonary hemorrhage has been supposed to be intimately connected with contraction of the left auriculo-ventricular opening; but, from Cases IX., X., and XI., it appears that this state of the lungs depends rather upon dilatation. I shall not occupy space by general statements on this point; it would require for its elucidation careful observation, and precise statements. Of the nine cases examined post-mortem, pulmonary condensation from hemorrhage was wanting in four; two of these are given at pages 1200 and 1204, vol. ix.; the other two presented less hypertrophy, but no very manifest dilatation.

The following statement of the cardiac lesions which co-existed with the mitral contraction, is drawn up chiefly from the state of the heart, as observed post-mortem, and from the physical signs, in so far as they afford information that may be trusted :—

The mitral valve, besides being contracted, was incompetent, in six of the nine cases which were examined anatomically; and from the signs in these and the other cases, it appeared to be incompetent in twelve of our sixteen patients.

Other valves were diseased in only two cases; and the proportion is even smaller than appears from this statement, inasmuch as in the other seven cases, which can scarcely be included in the calculation, as they were not dissected, not one appeared to be affected in any other valve. I regard this as an important fact, and in this respect these cases contrast with the other forms of valvular disease; for in them the lesion is rarely limited to one valve; and, even if another valve is not involved, the endocardium and the aorta are usually more or less affected. The limitation of disease to one orifice suggests that possibly there is something distinctive in the nature of this disease, and that there is a peculiar obnoxiousness of the left auriculo-ventricular valve to the species of degeneration from which these contractions result. It is possible, too, that the delay and the abatement of symptoms in these cases is due to this limitation of the

disease. It must not, indeed, be assumed, for there are not facts to prove, that the elementary forms of disease, from which the various valvular deformities result, are really different from each other. Nevertheless, the observed facts are remarkable, and of practical value. The early age at which the contraction of the mitral orifice existed in many of these cases, and the rarity with which they could be traced to any inflammatory or rheumatic attack, as they, almost without exception, were from the first chronic and latent, contrast with the age and origin in other valvular affections, and support the supposition, that there is a difference in the elementary forms of disease from which these lesions spring.

The two cases in which other valvular lesions co-existed occurred in very different circumstances, and yet they present some analogy; they tend to confirm the supposition of the distinct nature of the elementary pathological states in which mitral contractions originate; they were as follows :—

CASE XIII.—Catherine Junor, æt. 22, was visited by me only a few days previous to death, in March 1845, along with Mr William Walker, who informed me that she had been liable to attacks of rheumatism for several years, and that the symptoms of acute cardiac inflammation had repeatedly occurred. She was suffering from the most aggravated effects of obstructed circulation ; and the signs of a dilated heart, and of contraction of the mitral orifice, existed.

On dissection, the aortic, as well as the mitral orifice were found exceedingly contracted. The heart was increased in bulk; there was general hypertrophy, but greatest of the left ventricle ; and all the cavities were dilated. There were old-standing evidences of endo-pericarditis. Dropsy and pulmonary apoplexy both existed.

The other case was also seen by me only during the last few days of life. She was visited by one of the pupils of the New Town Dispensary, and had not called in medical aid till the seventh day previous to death. In reporting these two cases I confine myself to such a general statement of the facts as will suffice to indicate their bearing on what has been said regarding the limitation of disease in this class of cases.

CASE XIV.—Jane Grieve, æt. 26 (13th January 1848). There was universal purple congestion of the surface, amounting to slight cyanosis, slight tumidity of the face, and suffusion of the eyes. Her expression was that of a person under the influence of opium ; she was torpid, but intelligent ; the extremities were cold ; pulse imperceptible. She complained of oppression of the chest, and slight cough, with watery and mucous expectoration of a prune-juice colour; no dyspnœa. The discharges from the bowels, after enema, were semi-fluid, and tar-like. She suffered from an intolerably irritable and tender state of the skin.

She had been confined to bed for only twelve days. She had been previously liable to fits of vertigo, and occasional attacks of palpitation and dyspnœa ; and her friends had, at times, observed an unusual "blueness" of the surface.

On dissection, both auriculo-ventricular openings were found contracted—
the left in the usual manner; the right by a *membranous curtain*, which was
spread across the aperture, and superseded the ordinary valvular structure ; it
had a perforation near its centre, about the size of a quill, which, with one
other still smaller opening, constituted the communication between the auricle
and ventricle.   The usual muscular columns, and the tendinous cords of the
tricuspid valve, were wanting; and there were extended, between the muscu-
lar wall of the ventricle and the above-mentioned membranous substitute for
the valve, four or five thread-like tendons, from a half-inch to an inch-and-a-
half long.   These tendons appeared fitted to drag the membranous expansion,
which occupied the aperture, towards the cavity of the ventricle during its
systole—thus constituting a more decidedly valvular structure.   The aortic
aperture also was contracted by the adhesion of the contiguous margins of the
sigmoid valves.   Hypertrophy was manifest, though its degree could not be
precisely determined.   Dilatation of the ventricles was not well marked.   The
auricles were large and distended.   Neither dropsy nor pulmonary apoplexy
existed.

In the former of these cases (XIII.), the extension of disease to
a second orifice was due to the extent of the endo-cardial inflamma-
tion, which may be explained by the rheumatic taint ; at all events,
the facts must be taken in connection.   We have seen that rheu-
matic endocarditis is rarely the origin of these contractions; and in
this solitary case in which it was, we find other orifices implicated,
rendering it all the more probable that the form of disease which
has been seen to limit itself to one orifice, and to have no relation
to manifested rheumatism, is different.

The latter case (XIV.) is the only instance I have met with of
contraction of the right auriculo-ventricular aperture ; and the only
case I have seen recorded is by Dr Hope.   In his case, as in
our patient Grieve, both auriculo-ventricular apertures were con-
tracted; in his patient, however, as appears from his description, the
contraction on both sides of the heart was due to degeneration of the
tissues.   This, certainly, was not the cause of the obstruction on the
right side in the case of Grieve (XIV.) ; for the tissues presented
the glistening fibrous and membranous aspect of the healthy struc-
ture ; and conveyed to my mind the idea, that the state of the parts
was a congenital malformation.

As it was impossible to determine precisely the degree of hyper-
trophy and dilatation in most of these cases, I shall not examine them
minutely with reference to the influence of these lesions.   It may be
asserted as a general fact, that hypertrophy, or increase of the mus-
cular substance, existed in every case ; though the weight of the
heart in some cases did not exceed 12 oz.; we have seen in one case
that it attained to 20 oz. (Case XI.)   I do not think the weight of
the heart exceeded 16 oz. in any other case.   If, however, the youth
of many of the patients be remembered, this must be regarded as a
high average weight.   In the cases which struggled longest against
the disease, and which had intervals of the most complete abatement
of distress, the hypertrophy was most decided.   Three cases, known

to be still alive, present the signs of hypertrophy; and these patients have laboured under the manifested effects and signs of mitral contraction for from three to six years.

If dilatation be. understood to signify merely increased capacity, then these cases were, without exception, so affected. If, on the other hand, it be understood, as the word is employed in this paper, to signify capacity increased disproportionately to the hypertrophy, and involving embarrassment of the heart, then dilatation was less invariably present. The left auricle was in every case dilated, as it always is in this form of disease. It usually contained firmly adherent decolourised coagula, which in two instances had the appearance of organized fibrinous polypi, which were pyriform, about three inches in length, and attached by their pedicle within the auricular appendage; they were hollow, and filled with a pus-like fluid, which, however, was not organized, and contained amorphous granules in such number as gave the fluid its creamy consistence. Dilatation of the right auricle, so remarkable in Case XI., did not exist to the same degree in any other case.

It is believed that there. is a tendency to dilatation of the right ventricle in cases of mitral contraction; and it appears that this is, in a degree, true. I think, however, that the frequency, as well as the degree, of this dilatation, has been exaggerated; and that dilatation of the left ventricle generally co-exists. A mistaken impression has probably arisen from the fact, that the existing dilatation of the left ventricle is more or less masked and screened from observation, by the greater increase of muscular substance, which ordinarily accompanies its dilatation, than in that of the right ventricle. Cases IX. and X. are examples of the very highest degrees of dilatation and of hypertrophy of the right ventricle; and in none of the other cases did there exist the same contrast in the state of the ventricles; but even in Case IX., let it be borne in mind, the dilatation had seriously implicated the left ventricle. Dilatation of both ventricles existed in all the cases which had been characterised by the most decided effects of an obstructed circulation.

These cases generally corroborate what has been said of the physical signs of this form of disease. The comparative smallness of the radial pulse was invariable. Fremitus, or grating tremor, at the apex, was ascertained in eleven of the sixteen cases—it probably existed in a larger proportion; it was observed to cease at times, and in one case it disappeared altogether; it was in most instances perceptibly antecedent to the ventricular systole. This sign was not present in the case (XIV.) in which both auriculo-ventricular apertures were contracted.

(To be continued.)

ARTICLE V.—*On Instinctive Imposture.* By HAMILTON KING-
LAKE, M.D., Physician to the Somerset and Taunton Hospital.

THE two following cases, which have recently come under my own
personal observation, are intended to illustrate a form of *moral un-
soundness,* which has not hitherto received from the mental patholo-
gist the attention it deserves. I allude to that peculiar perversion
of the moral feelings, which gives rise to a class of actions which
may be termed *instinctive imposture,* in contradistinction to the acts
of deception which are prompted by intelligible motives, and prac-
tised with the view either of obtaining some real and practical bene-
fit, or of avoiding some threatening evil.

The subject of the first case was a boy, about eleven years of age, named
Thomas Chaplin, the son of a butler in a gentleman's family. According to
the statement of his parents, he was affected in early life with hydrocephalus ;
but from that period until about two years ago, when his present ailment com-
menced, he had enjoyed a fair share of health.

The disease of which he was the unhappy subject was accounted to be a
general, though incomplete, paralysis of the motor system of nerves, so that he
was totally unable to stand, and could only with great pain and difficulty move
his limbs when in the recumbent posture. The most distressing feature in his
case, however, was his alleged inability to swallow, so that for a period of two
years he was thought to be constantly on the starving point, and only saved
from fatal inanition by the fluid which was occasionally put into his mouth, for
the purpose of moistening his throat.

The unfortunate condition of this poor boy, thus cut off in the very spring-
time of his days from all the pleasures and active occupations of life, and yet
doomed apparently to drag on a mere vegetative existence for years to come,
naturally excited a vast deal of interest, not only among his own immediate
friends and relations, but even amongst the gentry in the neighbourhood, who,
in the richness of their benevolence, appeared to have showered down upon
him all that he was seemingly in a condition to appreciate—viz., commisera-
tion for his afflictions, and religious consolation for the severe trial of fortitude
in which he was unhappily engaged. He is said to have received these kind
attentions with all becoming gratitude and respect, and to have manifested the
sincerity of his feelings by a marked preference for all books and persons that
were calculated to fix his mind on that train of religious thought which his
sympathising friends had already successfully awakened in him. With such
mental food, together with the small amount of fluid aliment which it was
presumed *did* find its way into his stomach, he managed to carry on life toler-
ably well, and continued, day by day, to grow in the affections of all who had
happened to become acquainted with this rare model of endurance and resig-
nation.

At length, however, the father, finding that he was spending his substance
on physicians to no effect, as his boy's case still baffled the skill of each of the
faculty he had consulted, determined, as a last resource (with the full concur-
rence of the boy himself), to send him into the Somerset and Taunton Hospi-
tal, where he became my patient.

The appearance of the child when I first saw him was certainly not such as
his previous history would have led me to anticipate. There was no great
emaciation of the body, nor did the countenance exhibit the usual indications
of suspended, or even very imperfect, nutrition. Concluding, therefore, on
the instant, that the inability to swallow did not exist, at any rate, to the
extent that was alleged, I desired him to drink some liquid that I might satisfy

myself of the proper effort being made to accomplish the act. This he attempted repeatedly in my presence; but I could easily perceive, that when his mouth was full of the liquid, he took more trouble to prevent its coming in contact with the pharynx, than he did to swallow it, whereas, with a small quantity (being in that case, perhaps, better enabled to mimic the forced act of deglutition), his efforts to effect it were correspondingly strenuous.

On raising him up to examine the spine, a slight convulsive tremor affected the muscles of his face and limbs for a few moments. He then complained of giddiness in the head, and acute pain in the back, which was further aggravated by pressure on every part of the spinal column. He manifested no intolerance of light, and the pupils, though large and sluggish in their action, yet contracted well on the near approach of the candle. The abdomen was large and tense, and when touched, suddenly bulged up in a most peculiar way. The general surface of the body was also morbidly sensitive to the touch. The bowels were stated to be habitually confined; but the functions of the kidneys and bladder were unimpaired.

Conceiving his disease to be made up of two elements—the one being a congestion, or chronic inflammation, of the membranes or substance of the cord, and the other a hypochondriacal state of mind, which led him greatly to exaggerate his ailments—I directed the treatment, in the first place, to the former affection. This consisted in the application of a croton-oil plaster to the spine; the exhibition of small doses of the iodide of mercury, occasional turpentine enemata, and the passing of electric shocks through the cervical region at the moment the act of swallowing a large bulk of fluid was attempted. This latter remedy was, however, discontinued by the house-surgeon (who had the immediate charge of the case), after the first or second application, in consequence of the intense pain which the boy said it occasioned him. Had it been persisted in, I have no doubt he would soon have requested me to dismiss him as cured, and the hospital would have acquired all the renown of restoring a paralytic, deemed incurable, to a perfect state of health.

During his stay in the hospital, his mother came once or twice to see him, and on one of these occasions it appears that she brought him some cake, which he expressed a wish to have, for the purpose of distributing the same among his fellow-patients; but which he, in fact, consumed himself, as the currants contained in it were subsequently discovered in his own fæces; but so alive did he seem to have been to this possible mode of his imposture being detected, that for some days after he had the cake in his possession he took to concealing his excrement in a part of his bed, where it was found, after other more certain evidence of his imposture had been obtained.

At length, however, no fresh supply of cake arriving, and getting tired of the very meagre sort of diet which he had prescribed for himself,[1] he took the opportunity, on a Sunday morning, when all the patients in his own ward were attending divine service in another part of the house, of exercising his limbs in quest of food, which he soon obtained by purloining the remnant of a loaf from the box of one of his fellow patients.

This petty larceny was witnessed (of course, unknowingly to him) by a person in an adjoining room ; but, even had not this direct evidence of the fact been obtained, it would have been rendered more than probable from the circumstance of a line of scattered bread crumbs on the floor being observed to point distinctly to the boy's bed, and which, it may be presumed, he dropped from his mouth, as he hurriedly eat on his way back to his own narrow home.

Upon being questioned the next day as to his newly-acquired powers of locomotion, he positively denied having left his bed on the occasion referred to, and

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[1] Small quantities of tea and barley-water were the only nutritious fluids he could be induced to take into his mouth during the fortnight he remained in the hospital.

reiterated more strongly than before his total inability either to stand or swallow. The issue of the case is soon told. He was at once made to understand that the only remaining remedy was the application of the actual cautery to the soles of his feet. Accordingly, the much-dreaded iron was brought in, and the process of heating it commenced under his own eyes; but, before it was heated to the requisite intensity, he requested to be allowed to try his strength in the way of standing. This feat he accomplished, after some difficulty, and then contended that such effort represented the utmost limits of his powers. The visible presence, however, of the glowing iron, and the arrangements that were formally made for its immediate application, soon got him into a walk, from which he gradually broke into a run, and this he was made to keep up until he was fairly exhausted.

His powers of swallowing were the last to return, and it almost required the actual contact of the cautery with the throat, before he could be induced to drink any liquid at all. Upon its being remarked to him, however, that it would be necessary to cauterise the fauces, in order to effect a perfect cure, he very rapidly drank off a pint of tea, without taking the cup from his mouth. He was afterwards flogged, and indulged, through the kindness of the matron, with a regular dinnre—two luxuries which he had not enjoyed before for many a long year. Before he was dismissed from the hospital, he confessed to me the imposition he had practised, expressed some sorrow for what he had done; but declared that he could assign no motive whatever for the strange line of conduct which he had so long successfully persevered in.

In the other case alluded to, the individual, although not personally the actual subject of the deceptions that were practised, was yet so far concerned in originating and maintaining them, as to lead to the inference that she was actuated in her conduct by a morbid and impulsive feeling, similar to that which induced the boy to practise his particular acts of imposture ; and hence it is that I am induced to associate the two cases together, as having their origin in the same kind of moral perversion.

Emma Waters, the person in question, was a middle-aged female servant, who occupied a confidential position in a lady's family, where she was treated with uniform kindness, to which she responded by professions of corresponding attachment to her mistress.

It so happened that the lady of the house had a great antipathy to rats and mice, which this same servant, it may be presumed, was not slow in discovering ; for she very soon took an opportunity of reporting that the house had suddenly become infested with these vermin ; that they had already made two or three desperate attacks on her own person (marks of which she exhibited); that they were in the habit of running about the house on the bell-wires, whence the discordant ringing of the bells, sometimes by day, and at other times in the middle of the night; and lastly, that they had commenced a fearful work of destruction in the lady's wardrobe, and on almost every edible part of the furniture.

Being requested, as a friend, to investigate the cause of this sudden irruption of the rat tribe, I went to the house; whereupon the servant referred to (proud beyond measure at being associated with matters of so great and unusual an interest) immediately undertook to conduct me through the several rooms, where I found, not only the sheets and blankets of the bed riddled as it were with bullets, but also many valuable articles of wearing apparel similarly perforated. In short, almost everything that was not absolutely under lock and key bore the same marks of the omnivorous appetite of some voracious animal, whilst the presence among these articles of a quantity of debris matter, pur-

porting to be the excrement of the rat, pointed to that animal as the cause of the devastation.[1]

Agreeing with the woman for the moment, that this wholesale work of destruction may possibly have been due to the voracity of rats, congregated in great numbers, I requested her to show me the holes from whence they emerged. This she was unable to do; but the next morning she intimated to me that she had discovered several holes in the roof, from which she had no doubt they had come in a body into the house. I accordingly had the roof opened, and my previous suspicions as to the imposture which was being practised were amply verified by observing a thick mass of cobwebs stretching across each hole on the roof-side, and which, of course, could not have existed had a rat recently passed through any such opening. There was other satisfactory evidence, from the bent and fractured state of the laths, that the opening was made from within, by some poking instrument. From the moment of my declaring my conviction, that these holes to which my attention had been directed were made by human hands, the work of destruction, which had before been going on with increasing activity (in spite of traps, and the encampment of a whole army of cats), now suddenly ceased. It must be mentioned, that during the whole of these extraordinary visitations the woman who alone had seen, and, by her own account, been knocked down by, a body of these animals, became an object of considerable interest to all who came to see the havoc that had been committed, and to hear her account of the dangers she had escaped. In the course of her narrations to these inquirers, she expressed no regret whatever for the quantity of valuable articles which had been injured or wholly destroyed, but appeared, on the contrary, in a state of the most pleasurable excitement, from having so successfully elicited expressions of astonishment and awe from her hearers ; and when at length she was accused of having herself committed the ravages she had falsely imputed to rats, she feebly repudiated the charge, adducing her general good conduct, and the fact of enjoying the full confidence of her mistress, in proof of her entire innocence of the affair. That the woman, however, was the principal, if not the only, guilty party in the matter, is rendered almost certain, not only from the circumstance of her being the sole person in the establishment who volunteered her testimony as to the presence and operations of these assumed rats, but also from the fact subsequently ascertained of her having been detected in the practice of similar impositions before. On one occasion she was known to have introduced (with no other view, seemingly, than that of exciting a degree of horror and surprise) a number of bugs into the bed-furniture of a lady, with whom she was living as a servant, and who was as much renowned for her scrupulous attention to the cleanliness of her *ménage* as she was for her instinctive dread of the class of vermin that had been thus cruelly imported into her establishment.

At another period of her service, when living in an old house, which only wanted the manifestations of the workings of an unquiet spirit to obtain for it the character of being haunted, she made the walls reverberate with all sorts of strange noises, and in so doing inflicted such injuries on certain parts of the house as led to the children of the family being accused, and subsequently punished, for the crime of which she alone was guilty.

The speciality of the cases thus recorded consists in this, that there was a total absence of the motives which in civil life usually incite to acts of imposture.

First,—No hope of mere gain could have actuated either the boy or the servant-maid, seeing that the one, from the respectable posi-

[1] The excrement alluded to had very much the appearance of little pellets of bread, rolled up between a dirty finger and thumb. The microscope, probably, would have revealed its true character.

tion of his parents, was already provided with the ordinary comforts of life, beyond which he could, of course, have no personal interest, whilst the acts to which the servant was a party were attended with considerable hazard to her. character, without any commensurate advantage, in case her imposition should have remained undetected.

Secondly,—As respects the boy, the imposture was not likely to have been practised in order to escape from the infliction of punishment or from the trammels of school, as he was ever accounted too amiable to deserve the one, and "too clever at his books" not to be happy in the acquisition of knowledge; nor was it at all probable that this same fear of punishment, or any other impending evil, or the passion of revenge, could have actuated the servant, as it was admitted that she lived on excellent terms with, and enjoyed the full confidence of, the mistress of each of the houses in which she carried on her extraordinary practices.

In the presumed absence, then, of the usual motives which in a sound mind are accounted capable of inciting to acts of deception, it remains to be considered what morbid or impulsive force exists in the mental constitution potent enough to effect a counterfeit of those actions which, under ordinary circumstances, are brought about through the operations of the volitional and reasoning faculties. Of the various elementary states of feeling that enter into the mental constitution of man, there is none, perhaps, more prominent or more general than *the desire of making one's self felt, as it were, in the minds of others,* and so long as this desire is kept within its normal limits, it may be said to be mainly instrumental in carrying out the salutary and beneficent purposes of the social state, inasmuch as it serves to combine individuals into masses, for mutual protection and support, and tends also to create that free interchange of thought and feeling through which the moral and intellectual advancement of the race is ultimately secured. But if this same desire should become so intense as to amount to an absolute craving for the attention and sympathy of others, the subject of such feeling (supposing him to be unable to gratify it by the legitimate means within his reach) is impelled, more or less forcibly, to simulate those states, which (were they real) would most surely secure to him the commiseration or notoriety he so much covets. Inasmuch, then, as the real subjects of pain and disease are quick in eliciting pity and sympathy, and the real subjects of extraordinary acts readily acquire for themselves the wished-for notoriety, so does it happen that the individual who is impelled instinctively to deceive, feigns, in his own person, either some particular form of disease, or associates himself with marvels of his own fabrication.

The case of the boy Chaplin, above recorded, appears to me to illustrate well the nature and course of the first of these instinctive impulses, or that form of deception which I have ventured to associate with a morbid and insatiable appetite for sympathy and approbation; whilst the extraordinary practices of the woman, Emma

Waters, may be classed under that other variety of moral aberration, which can only be connected, seemingly, with a like craving for attention and notoriety. The next point to determine, in regard to these instinctive impulses, is the degree to which they are controllable by acts of volition.

Looking to the nature of instinctive actions in general, the perfectness and regularity with which they are performed, so long as the impulse which prompts them is felt in its due intensity, and the immediate interruptions they sustain, if, through the intervention of any mental process, or other feeling of the mind, specially directed towards these instinctive acts, such impulsive feelings become blunted or otherwise changed from their normal standard, may it not be inferred, that the will would in a similar manner be equally operative (provided it be exerted in sufficient strength) in suspending or interrupting that other class of instinctive actions, which are excited by impulses of a morbid character?

Assuming, then, that a vigorous effort of the will *is* capable, in many instances, of breaking up the relation subsisting between a morbid impulse, and the perverted course of actions consequent thereto, how happens it, that this particular morbid propensity to deceive, is not more frequently controlled by the will, seeing that the subjects of such perverted impulse are, in almost all cases, fully alive to the wrongfulness of their acts? Is it not that the power of the will is either not exercised at all in such cases, or is exercised in so feeble a manner as not sufficiently to antagonise the more rapid and energetic working of the abnormal impulse, which by reason of the inactivity of the volitional force is thus *unresisted*, rather than rendered *irresistible* by virtue of the intensity of the impelling force.

The frequent association of cases of instinctive imposture with the hysterical temperament, in which the power of exercising and rightly directing the will is known to be so limited, appears to strengthen the above supposition, whilst it suggests the propriety of likening the pathology of such cases rather to that class of nervous diseases of which hysteria is the type, than to those graver and more permanent changes in the intimate constitution of the brain which are represented by insanity, towards which, however, the lesser mental affection tends ultimately to gravitate, if not opposed by counteracting influences. Under this view of the nature of instinctive imposture, the prophylactic measures to be adopted against the growth and development of the morbid feelings of which it is the result, should be those proper to hysteria generally, whilst the paroxysm of deception (so to speak) would most surely be suspended, by giving occasion for the exercise of such strong counter-motives as the fear of punishment, the threatened exposure of the imposture, or the opening up new prospects of pleasurable excitement, tend necessarily to create.

𝔓art 𝔖econd.

REVIEWS.

Gout: its History, its Causes, and its Cure. By WILLIAM GAIRDNER,
        M.D.   John Churchill, London.   1849.

GOUT is a disease which physicians have delighted to expatiate
upon.   It is a disease belonging to the high-born and luxurious,
and has been considered a sign of wealth and genius.   Of late
years three or four of our most talented physicians have published
treatises on the subject, and to these we are happy to add the un-
pretending volume of Dr Gairdner.   This work is one of a class
almost peculiar to English literature, the production of a practical
physician, acquainted with the science and art of his profession, of
an inquiring and observing mind, and extensive experience, and
written without pretension, to explain his own views on a favourite
subject.

These views, though occasionally differing from other authors,
are supported by reasonable data.   Though not agreeing with Dr
Gairdner on all points, still we must defer, in some instances, to his
large experience, for our northern capital affords a narrow field in
comparison with the metropolis.   No other city in the world pre-
sents a more ample field than London, and no other country than
England, for the study of gout.

In Dr Forbes' Bibliography we reckon more than 200 works on
gout, not one of which has issued from a Scottish press, while Lon-
don teems with them.   This produces a great peculiarity in the
views and practice of our southern brethren.   They trace gout in
almost every complaint to which the human body is liable, not only
in its congeners of biliary and urinary complaints, but in a great
number of others—diseases of the heart, liver, hydrothorax, dropsies,
&c.—while we, in our northern sphere, meeting with the same dis-
eases, unconnected with gout, which is extremely rare, consider
them as separate entities, however allied.

We do not pretend to give a full analysis of this volume, which
both its great condensation and our limits prevent, but we chiefly wish
to advert to such views as present peculiar novelty or interest.   Dr
Gairdner confines his work to the purer type of gout, without re-
ference to its connection with rheumatism.   He believes gout, in
its regular form, to be as curable and amenable to relief as most
diseases.   The difficulty lies in treating its irregular forms.
One paragraph has somewhat startled us :   " I believe," he says,
" the gouty diathesis is often most perfectly developed in those who
never see its local manifestations ; and I am convinced the stru-

mous is not more frequent than the gouty diathesis." He considers that Dr Prout confirms this opinion, but we can scarcely agree in his interpretation of the Dr's expressions, for he only says that strumous, lithic acid, and gouty diseases are all results of mal-assimilation of the albuminous principles, and often run into each other, &c. Dr Gairdner's view, certainly, does not apply to Scotland, where struma exists most abundantly in every class of life, and in every form, and gout is very rare. The premonitory signs of gout are generally pains in the chest, with irregularity in the action of the heart; the next signs are impeded cutaneous circulation, or eruptions; the nervous system also suffers, and the bowels act irregularly. The local appearances are much less constant than these signs, which require to be watched, as this is the best season for applying remedies. Chapter 2d is devoted to the symptoms of the paroxysm, which are too well known to require notice, except that Dr Gairdner thinks that only two of Dr Cullen's four species deserve a separate place, the regular and atonic. A more important distinction is made in marking the three stages of the disease, as indicated by the inroads made on the constitution. These stages are boldly sketched. 1st, the regular form; then the 2d, when the powers of life begin to fail; and 3d and last, melancholy stages, when mind and body equally give way. We pass over the symptoms and sequelæ, which are well deserving of attentive perusal, to the terminations, which seem to require a more particular consideration. Before doing so, however, we may quote what Dr Gairdner considers the true pathology of gout to be, both as a specimen of his style, and for the better understanding of his general views :—

"The real pathology of gout appears, then, to me, to be comprised under these heads :—an increased pressure of the blood from its accumulation in the great veins, and an altered state of that fluid, leading to the formation of uric acid instead of urea; these results being dependent on too copious an assimilation of nutriment, or defective respiration, and on more or less suppression of the healthy evacuations from the liver, the kidneys, and the skin. The plethoric state, thus engendered, causes, in strong constitutions, painful manifestations of the regular diseases; in feeble habits, its irregular and atonic forms. But this plethoric condition has its cause, which I have as plainly pointed out, as my desire not to assume, in a medical treatise, the censorial privilege of a moralist, would permit. We must still pause for a reply to the dark and intricate question, why some constitutions, when thus affected, generate gout, while others show no tendency whatever to the disease."—P. 145.

One of the terminations is apoplexy, "where the same disposition to the deposit of earthy matter, which is so manifest in the articulations, is equally evident in the arteries and veins." Now we know that these deposits are entirely of a different kind, and occur independently of gout, and therefore object to such sweeping generalisation. A patient affected by gout may die of apoplexy, without these being related as cause and effect. We have twice, within the last year, met with cancerous ulceration of the great intestines, and with the arterial system in general extensively affected by calca-

reous and ossific deposits, and have not considered them as more than coincidences. The same remark may apply to menorrhagia, ascites, and hydrothorax, which are frequent terminations; but it is far from clear that they are mutual dependencies. Dr Gairdner, however, thinks otherwise, and quotes, from Morgagni, the interesting case of Cardinal Corneli, who suffered under a long complication of diseases, of which gout was one, but not, as it appears, the principal; and where, on examination, the right kidney, with its fat, had attained the size of a man's head, and contained eleven calculi, many of them large, and where the aorta was much enlarged and indurated, from the heart to the iliac arteries. Dr Gairdner says, " I call the close attention of the reader to this case, because I think the effect of gout in breaking down the solid structure of, and destroying the functions of, the body, is well exemplified by it." The case detailed by Dr Gairdner's brother in Edinburgh, is also very interesting, where the patient chiefly complained of pains in the chest, giddiness and faintness, continuing from 1841 to the day of his sudden death in 1847, during which time he had one fit of gout of three weeks' duration. In this patient the aorta was dilated, and the muscular substance of the heart changed in its structure,—in fact, what appears to us the fatty heart; and there was also disease of the kidney. This recalls vividly to our recollection the case of a medical military officer, who had served long in various climates, and who became affected with the symptoms of albuminaria, which were not then so well understood as now :—Puffiness in the face, œdema of the feet and legs, great weakness, and occasional fits of difficult breathing, especially at night. The urine was pale, abundant, and gave a cloud with heat or nitric acid. The patient was attended by the late Dr Abercrombie, Dr Marshall, Dep.-Inspector-General of Hospitals, and the writer. A fortnight before his death he had a well-marked but brief attack of gout. His death was sudden, evidently from the poisonous effect of urea on the brain. On examination the kidneys were found in the last stage of the granular degeneration, small and irregular externally. The cortical substance had almost disappeared, and the remaining part was granular, hard, and cutting, almost like cartilage. There was no other disease present, but a softened state of the muscular structure of the heart.

We have dwelt longer on this subject than may be considered necessary; but we believe the idea of gout in the system may occasionally paralyse the mind of the physician in the treatment of its concomitant diseases.

Atonic gout is then treated of. This, from the first, shows itself by affection of the stomach, every form of dyspepsia being present. It is, however, on the nervous system that atonic gout makes its deepest impression. Gout may show itself in the stomach or heart, but, according to Dr Gairdner, it is to the head that metastasis of gout more frequently takes place, than to any other

organ, beginning with torpor and oppression, and ending with apoplexy.

Dr Gairdner then treats of the theory of a morbific matter, which has of late received the support of Drs Holland, Seymour, Tod, and others, and which is combated by Dr Gairdner, with what we think but partial success. The existence of any peculiar gouty fluid is not supposed by these physicians, and Dr Gairdner allows that the blood is vitiated, and loaded with uric acid and its compounds.

Chap. 5 contains some original observations, and (if confirmed by subsequent inquiry) most important views on the nature of gout.

" All the reflections I have made on this subject, incline me strongly to the belief that, so far as secreting organs are concerned, organised principles are inconvertible, and that in the function of assimilation, the great changes of elementary composition and organic constitution take place.—P. 81.

Urea and uric acid are not found as constituents of the solid structure of animal bodies; though found in the blood, they have never been discovered in the stomach. Urea and uric acid, then, are formed within the body; and in certain morbid states, nascent urea becomes uric acid during the assimilation of the food. Starting from these facts, Dr Gairdner found, in one gouty patient, that the urine yielded 25 parts in 1000 of urea, and when health was re-established, while the urates had disappeared, the proportion of urea had risen to 29. In another patient, in the paroxysm, the ratio of uric acid to urea was 1 to 18·6, when partially restored, 1 to 28 ; then (p. 88)

" If these results be confirmed by future observations on similar cases, it will, I think, place on an irrefragable basis the opinion that the uric acid, though not derived from the urea, at least owns the same origin, and that these substances are vicarious of each other. In a state of health, the elements necessary for the composition of urea, are separated from the blood, but under the influence of the gouty diathesis, the secretion of uric acid takes place with greater abundance."

Neither the chapter on the nature of gout, nor that on the exciting causes, call for much remark. " A general state of vascular plethora of the great chylopoietic organs, is always met with in gout." The heart is oppressed, and this, associated with the impure condition of the blood, from the non-elimination of urea and urates, and probably of the biliary constituents, is the cause of the disordered function of that organ.

The exciting causes, as is well known, act more readily on a person hereditarily disposed, than where the gout is acquired.

The chapters on treatment are marked by great judgment and practical sound sense. Dr Gairdner repeats, that gout in its early stages is perfectly curable, not by physic, but by the physician, and that the return of the disease may be prevented, when the patient concurs with the physician.

In hereditary cases, it takes its origin from infancy. The errors committed in diet in childhood and youth, are pointed out. The uses and advantages of exercise are fully discussed, and rules for diet enforced. A spare diet is not recommended. " I believe the most suitable regimen for the gouty is a mixture of animal and vegetable food, in which the former greatly predominates, but frugally administered, within the power of the stomach to digest, and of the constitution to assimilate." The lighter wines are the only kind to be recommended. Port wine is considered as the most sure, rapid, and pernicious promoter of the disease.

Bleeding.—Dr Gairdner agrees in condemning blood-letting generally, but thinks there are some cases in which small bleedings, from 3 to 6 oz., may be useful in relieving congestion, and giving free play to the functions of the kidneys; but to render this safe, a certain degree of vigour of constitution is required.

Purgatives.—Laxatives are essential to gout, while *strong purgatives are pernicious.*

Dr Gairdner prefers aloes, rhubarb, senna, jalap, and scammony, to saline purgatives. The neutral salts, say in ½ drachm doses, are useful as diuretics.

Alkalies, Dr Gairdner thinks, have been praised beyond their value, and that the neutral salts are preferable.

Tonics, at the close of the paroxyms, are most useful, but not before. Quinine and iron, unless there is a strong tendency to the head, are preferred. In old people, where the articulations are swollen, and the pulse is feeble and intermitting, the carbonas ferri saccharat., with 8 or 10 grs. of rhubarb, and 1 drachm of phosphate of soda, and ½ oz. of decoction of aloes comp., at bedtime, is recommended.

Colchicum.—Dr Gairdner differs in opinion on the action of this medicine from Dr Christison, who declares that he has never seen the full benefit of colchicum till it has produced griping, purging, or some disturbance of the primæ viæ. Dr Gairdner considers that colchicum never more effectually relieves the patient, than when it acts silently and peacefully, without producing any action whatever. With this opinion we agree. He thinks that it acts chiefly through the nervous system,—and asks, "May not some part of the great effect of colchicum, and of veratrum album, aconite, and opium (all of which remedies may often be made coadjutors to, and sometimes substitutes for, colchicum), be ascribed to their power of regulating the action of the heart, so as to induce a better and more even distribution of blood in both the systemic and pulmonic capillaries."

Colchicum is administered with most benefit when the violence of the fit is over.

Dr Gairdner does not allude to Dr Holland's plan of continuing the colchicum for a considerable period.

The reader will observe, that the only allusion to opiates, so much lauded by other physicians, is in the paragraph quoted above, nor is any reference made to external applications. We have seen great benefit derived from the bootikins, so often mentioned in Horace Walpole's letters, a kind of sock of oiled silk. Dr Gairdner warns the patient not to expect too much from drugs; and advises a holiday after a fit, and the waters of Buxton, Wiesbaden, or Marienbaden,—if there should be visceral congestion, Cheltenham, Leamington, or Vichy.

In advanced cases, with great debility, Kissingen, Pyrmont, Spa, or Tonbridge, may be recommended; and when the fit has left great debility of limb, a visit to Bath, or Aix-la-Chapelle, will be found profitable.

Metastatic Gout.—The treatment of this form is beset with difficulties. The patient is in intense suffering, and the friends are clamorous for active measures. The powerful remedies employed—brandy, ether, ammonia, and opium—Dr Gairdner believes to be often unnecessary, and consequently injurious. The immediate seizure has generally, if not always, an exciting cause in indigestion, some disturbance of the circulation, or some emotion of the mind. If these can be removed, their effects will pass away. The alarming symptoms will often disappear, with little external aid; and Dr Gairdner has never seen any bad consequences from a little delay. He relates some cases in which too active interference was followed by disastrous consequences, and others, where the most alarming symptoms disappeared almost spontaneously. Decision in practice, but not hurry or alarm, are the qualities required in the physician.

" In general, it may be said, that those cases, attended with little change in the pulse, even though there be intense suffering, severe vomiting, and signs of much disturbance in the stomach and diaphragm, best bear delay, and that those in which the action of the heart is very depressed, and where there is little acute pains, are the cases which most imperatively call for prompt and effectual aid."—P. 225.

In cases of disturbed circulation where the organisation of the heart is affected, chalybeates, and other tonics, are the most powerful remedies. When the head is affected, the patients are not to be treated as if affected by apoplexy; a small bleeding, colchicum, and purgatives, are our chief means of treatment. Iron and tonics must be avoided. " Much skill is requisite in the management of the diet; but even in cases of translation to the brain, I am persuaded that it should be chiefly of animal substances. All causes of indigestion must be carefully avoided; and no doubt can exist that vegetable food taxes much more heavily the assimilating function than animal matters." This terminates Dr Gairdner's work, which we consider, in every point of view, a valuable addition to practical medicine.

The Diseases of Children. By FLEETWOOD CHURCHILL, M.D.,
M.R.I.A., &c.   Dublin, 1850.   Small 8vo.   Pp. 656.

THE present work of Dr Churchill is divided into two parts.   The
first part, occupying fifty-three pages, contains very judicious ob-
servations on the management of infants and children.   The second
part, treating of the diseases to which they are subject, is divided
into seven sections, and each of these into several chapters.   The
former comprehends diseases, 1st, of the nervous system; 2d, of the
respiratory system ; 3d, of the heart ; 4th, of the digestive system ;
5th, of the skin ; 6th, eruptive fevers; and, 7th, infantile remittent
fever.   In each section there is first noticed the diseases by which
the fœtus is most frequently attacked during intra-uterine life ;
then those which it presents at birth, whether of long standing or
acquired during childbirth, together with certain malformations
which require treatment; and, lastly, the diseases which affect in-
fancy and childhood.

In carrying out his plan, Dr Churchill has evidently taken great
pains to gather information from a great variety of sources, and
has, in most instances, succeeded in giving a copious and correct
account of what has been published of value, in different systematic
treatises and monographs.   His reading, however, does not seem
to have extended to this Journal, and none of the many valuable
papers on the diseases of children scattered throughout its pages,
have been in any way noticed.   With very few exceptions, also,
the morbid anatomy and pathology of each disease is an echo of
what is to be found in Abercrombie, Billard, or, at the latest, Rilliet
and Barthez.   Whenever more recent researches are alluded to, as
when speaking of Porrigo, Muguet, and so on, the author is evi-
dently beyond his depth, and incapable of determining who should
and who should not be trusted.   We beg leave to assure Dr
Churchill, that if he will only take the pains to examine things for
himself in a proper manner, he may easily be satisfied that the ex-
istence of vegetables parasites are facts capable of demonstration,
and not opinions, the truth or falsity of which are to be ques-
tioned.

Some diseases are treated of at great length, others are very
meagre in detail, and a few very important ones are altogether
overlooked.   Thus pertussis occupies thirty pages; inflammation
of the brain, including induration, softening, and abscess, only ten
pages ; indeed, nowhere, perhaps, are the pathological deficiencies
of the work better observed, than in chapter 8 of section 1, which
treats of these important alterations.   On the other hand, the sub-
jects of scrofula, phthisis, and atrophia mesenterica are not men-
tioned in the book,—omissions which, in a work on the diseases of
children, it is very difficult to account for.

Notwithstanding these deficiencies, we can recommend Dr

Churchill's work, if not as a complete, at least as a very useful, treatise on the diseases of children. We have not risen from its perusal with any enlarged notions, either as to theory or practice; there is nothing of novelty, but much literary research well condensed.

Locke and Sydenham. (From North British Review) 1849. 8vo, pp. 36.

WE can heartily recommend to our readers a perusal of this very interesting review of the lives and writings of the philosopher and physician. To those who venerate the olden time, who delight to study the character of the illustrious dead, who appreciate a well-told story and droll humour, savouring of antiquity, these few pages will afford a rich treat ; while, to one acquainted with the tendency of modern medical science,—with the short roads to learning by which passengers are enticed from the safe highways of observation and induction, they afford material for serious reflection. They everywhere inculcate a reliance on that sound form of logic, by the exercise of which, the greatest results have been achieved for science, and which men eminent in the history of medicine, have wielded, often, it may be, unconsciously. As the artist may profit by a knowledge of the construction of the tools with which he works, or which have been found useful in the hands of greater masters, we cordially agree with our author in wishing, " that our young doctors knew a little more of the laws of thought, of the nature and rules of evidence, of the general procedure of their own minds, in the search after the proof and the application of what is true, than, we fear, they generally do." They would then distinguish and avoid the snare of flimsy hypothesis, which lies so often in their path, would spare no labour in acquiring the art of observing correctly, and if not rewarded by a full measure of that intuitive sagacity which seemed to distinguish the riper years of such men as Sydenham and Abercrombie, and which is probably reserved for those of transcendent intellect, would at least improve the talents which have been committed to them. The author is no believer in the perfectibility of medical science, and views, with some distrust, the means by which it is attempted to connect it more closely with the physical sciences ; which, he fears, may render the office of a physician more difficult than before, as he must work in a wider field, and use finer weapons. In our opinion, no more reasonable argument can be used against the adoption of the modern means of investigation, than against the use of arithmetic, or of our five senses ; and we understand the lively banter of the author to be directed more against those who, with ears and eyes, neither can hear nor see, than against those who add to the store of knowledge by carefully employing new means of observation.

Obstetrics: The Science and The Art. By CHARLES MEIGS,
M.D., Professor of Midwifery in the Jefferson Medical College.
8vo, pp. 671.

Elements of the Principles and Practice of Midwifery. By DAVID
H. TUCKER, M.D., Professor of Medicine, and formerly of
Obstetrics, in Franklin Medical College. 8vo, pp. 402.

A Theoretical and Practical Treatise on Human Parturition. By
H. MILLER, M.D., Professor of Midwifery in the University of
Louisville. 8vo, pp. 463.

OF late years, the American medical press has certainly been suf-
ficiently active; but hitherto it has issued principally mere reprints
of the more important works published in Britain, and translations
of standard French and German treatises. A new era, however,
is evidently dawning, and the time may not be distant, when
Europe will derive many original accessions to medical science and
medical literature from the great western world.

As evidence that a change is coming over the American medical
press, in regard to the publication of original American medical
works, we have only to appeal to the fact, that, within the last few
months, no less than three obstetric text-books, by the professors
of midwifery in three different medical schools, have appeared.
Two of these, the works of Dr Meigs and Dr Tucker, have been
published at Philadelphia, that of Dr Miller at Louisville.

All the three works possess much merit; but they have, all of them,
been evidently written with far too much haste and expedition, to
allow of the authors doing full justice, either to their subjects or to
themselves. Dr Meigs has interspersed his works with some ori-
ginal obstetric cases and observations, which are valuable, from the
high character of the author. All the three works prove, that
American midwifery, both as an art and as a science, has a kind
of hybrid character, in so far as it consists of an amalgamation
of the ideas and practices of the British and French schools, and
possesses many of the good parts of both; whilst, assuredly, it has
not laid aside some of the more glaring errors of either.

In reading these works, nothing has astonished us more than the
ideas which the authors seem to hold, as to the possible and ex-
treme prolongation of the term of human pregnancy. The usual
period of utero-gestation in woman extends, as is well known, to
280 days. Dr Tucker mentions a case tried before the American
law courts. In this instance, a man was found guilty of fornica-
tion and bastardy, and the usual sentence passed upon him, al-
though the woman did not produce till 313 days after the alleged
date of the sexual intercourse. He quotes another case where the
patient was delivered exactly 365 days after the last appearance of
the catamenia; and a third, where the delivery did not take place

till 372 days after the same date. We guessed our American brethren to be more 'cute men. But Dr Meigs gives a still more extraordinary case in a patient of his own, who was believed to have conceived in July 1839, quickened on the 20th November, and was not delivered till "about daylight," on the 13th September 1840, that is, 300 days after quickening, and 14 months after conception.

Rational Medicine: A Vindication. The Address delivered on the opening of the New School of Medicine, Surgeons' Hall, Edinburgh, November 6, 1849; with an Appendix. By ALEXANDER WOOD, M.D., &c. Edinburgh, 1849. 8vo, pp. 88.

Lecture Introductory to a Course of Clinical Medicine. Delivered in the Glasgow Royal Infirmary, on the 13th November 1849. By J. A. EASTON, M.D., &c. Glasgow, 1849. 8vo, pp. 20.

THE first of these two pamphlets bears externally, on a gold band, the imposing title of " WOOD'S RATIONAL MEDICINE." In the title page it is called a Vindication, but of what is not stated; and whether it be of rational medicine, of the address, or of the new school, its necessity is nowhere pointed out to us. The term " New School of Medicine," must not induce our readers to suppose that any such school has recently sprung up in Edinburgh ; what Dr Wood means is, that the old teachers have located themselves in a new and commodious building, which the College of Surgeons has erected for them. The titles of this pamphlet certainly did not prepossess us in its favour ; we were, therefore, agreeably surprised to find that " Wood's Rational Medicine " consisted of a very excellent introductory address, admirably adapted to the occasion on which it was delivered, and containing sound precepts, well expressed, as to the manner in which medicine should be cultivated both as a science and as an art.

We take this opportunity of stating, that we feel deeply interested in the success of the Extra-Academical School of Edinburgh. Dr Wood tells us, that out of the thirteen professors of whom the Medical Faculty in the University consists, seven have been chosen from among the teachers of that school, which has also supplied distinguished professors to the universities of London, Glasgow, Aberdeen, and St Andrews. We trust that it may long continue to be a nursery for the education of sound instructors in the various branches of medicine, and that its individual members will never forget that they can only become so, by earnest and well-directed endeavours to advance medical science, and improve its practice.

The lecture by Dr Easton is also a most judicious and able performance, clearly indicating the excellent spirit with which that gentleman has commenced the important duties of clinical instructor

in Glasgow. We shall be happy to keep a corner in our Clinical Department for the occasional notes and remarks of so judicious a physician as the author.

The History of the Cholera in Exeter in 1832. By THOMAS SHAPTER, M.D., Physician to the Devon and Exeter Hospital, &c. London, 1849.

The Cholera at Malta in 1837. By SETH B. WATSON, D.M., of St John's College, &c. London, 1848.

A Treatise on Cholera. By NATHANIEL ALCOCK, A.B., M.D., &c. London, 1849.

THE three works which we propose to notice, *seriatim*, although they all treat of cholera, have little but the title in common.

Dr Shapter has produced, in a very elegant form, much interesting information regarding the pestilence which ravaged Exeter in 1832. He has devoted no inconsiderable labour to the task, has ransacked every available record, and has collated the results of his researches, with the recollections of his personal experience. His treatise contains a mass of trustworthy and well-arranged statistics, much sound reasoning upon what he has described, and all so skilfully concocted that the general reader will relish his work quite as well as the physician. Thus, we have read with interest the proceedings of the Boards of Health of the period, with their handbills, manifestos, etc., usually no grateful task; and we have especially admired the description given of the state of the public mind, first incredulous as to the existence of the disease; then exasperated against the doctors—the reputed originators of the pest, the buriers of the dead alive, etc.; then overpowered by the too palpable evidence of present calamity, anxious almost to despair, or seeking refuge from the surrounding desolation in fearful profligacy.

We feel that these details must have a peculiar charm for those who themselves recollect some of the scenes described, and are satisfied that the future inhabitants of Exeter will long value highly the curious history of the pestilence of 1832, which is here presented to them in so attractive a form.

" The Cholera at Malta," is a translation from the Italian of Dr Guiseppe Stilon, and gives a statistical account of the epidemic, which in 1837, in little more than three months, swept away upwards of 4000 individuals, or $3\frac{1}{2}$ per cent. of the entire population of the island. In his account of the pathology of the disease, Dr Stilon brings forward no fact or theory with which our readers are not already familiar: he is a staunch non-contagionist, and most uncompromising mercurialist. We are informed, in the letter

from Chief-Justice Sir John Stoddart, which is prefixed to Dr Watson's translation, that Dr S. actually administered to two of his patients in successive doses *one thousand* grains of calomel each, and that both recovered. (See p. 32.)

On examining Dr Stilon's tables it will be found, that about *eighty-seven thousand* grains of calomel were distributed to 373 patients—being on an average about 230 grains to each—that of these patients 52 per cent. died, and that few of the convalescents were salivated. One man seems to have swallowed *eleven hundred and sixty* grains, and to have been sent home on the 8th day after the commencement of the treatment. A scruple dose was given every hour, or every half hour, during the state of collapse; but when the urgent symptoms began to abate, the interval between the doses was lengthened.

We believe that this calomel practice is almost inert, and that Dr Stilon may be fairly said to have wasted 15 pounds of calomel upon the poor Maltese. If any considerable portion of the drug really passed into the system during the cold stage, it is hardly credible that only 15 or $\frac{1}{12}$th of the convalescents should have been salivated. We have had considerable experience in the treatment of cholera by mercurials in every possible dose, and are convinced, that calomel given to a collapsed patient, is either speedily rejected by vomiting, or remains unaltered in the stomach, till the powers of nature, aided it may be by other remedies, bring about reaction. If the *large* doses are useless during collapse, they are hurtful during reaction. The process of absorption, once suspended, is now again restored, and mercury can be made to affect the system as easily as in the healthy condition. There is no indication for the employment of the *heroic* or monstrous dose; it has been known to produce most violent salivation, but has never, we believe, exerted a therapeutic effect which cannot be more safely obtained by the use of more moderate quantities. Neither have we evidence of the alleged antagonism between the constitutional action of mercury and of the choleraic poison. This was sufficiently illustrated by the outbreak of the disease last year, in the military hospital at Arras, where the first few cases occurred in patients undergoing a mercurial course, *more patrum*, to cure them of syphilis. When judiciously given, on sound therapeutic indications, mercury is undoubtedly a valuable remedy in the early stage of cholera. It may be said to be even more valuable during the consecutive fever, when reaction has set in, but before the healthy state of the secretions is restored. Its good effects which we seek to obtain are what Sir Charles Bell used to term its power of "purging *into* the intestines," of stimulating all the viscera, particularly the liver and kidney, of restoring the healthy action of the skin and mucous membranes, and of effecting the elimination of noxious principles, which have been absorbed into the circulating system, or generated within it.

Dr Alcock's work, was, we are informed, suggested, by "the having accidentally seen hanging in a hall in Dublin, the ' Circular Manifesto' of the Board of Health, dated September 1, 1848." (See p. 7). It subsequently transpires that this memorable document contained the following words :—"All experience proves that cholera is rarely, if ever, contagious," and again, "The non-contagious character of cholera fortunately removes all objection to the receiving of persons suffering under this disease into the ordinary hospitals," etc.—Pp. 41, 42.

Scandalized at the inconsistency involved in these two passages, and having a very decided conviction himself that cholera is *never* contagious, Dr Alcock lost not a day in inditing an address to the Board of Health, and in communicating the impressions which he had formed in 1832, while attached to a Dublin Hospital. If we have succeeded in catching the spirit of Dr Alcock's arguments, he labours to demonstrate, that cholera is never contagious, 1stly, Because choleraphobia *is* contagious, and ends in cholera; 2ndly, Because Dr A. never knew a Roman Catholic priest, a sister of charity, or a medical attendant catch the disease; 3dly, Because the nurses in the Townsend Street Hospital escaped (with one exception) in 1832.

Let Dr A. ponder upon what follows. It is certain that Dr A.'s experience constitutes a mere fraction of what can be appealed to in illustration of the contagion question, and his opportunities for the study of all relating to the previous history of his patients must, in a large hospital, have been quite imperfect. Roman Catholic priests and medical men are, from their position in society, exempt from that extreme predisposition to the disease, which poverty and intemperance engender, neither do they *always* escape, as we doubt not Dr A. is now well aware. In certain hospitals (as for instance those of Belfast and Edinburgh) nurses have suffered in so fearful a ratio, that the ordinary doctrine of probabilities closely connects their sickness with their occupation. A mass of evidence has been collected regarding the propagation of the disease in consequence of the emigration of the sick into healthy localities, yet we find no allusion to this evidence in the address of Dr A. That our readers may distinctly understand how feebly the non-contagion dogma can be argued, we quote from page 47 the following case, together with the *non-sequiturs* wherewith Dr A. winds up his arguments.

In the summer of 1833, I was called from Kilkenny to visit a farmer who tenanted a most comfortable house and out-offices in an isolated locality; I found the farmer, a man of about sixty years, in blue cholera. I inquired, had he arranged his affairs? he said, no, and that no one would come near him who could do so. I offered to write down his wishes in the presence of his family, and have the paper duly witnessed and signed. It was at once agreed to by all parties, and executed. I was then brought to another room to visit his mother, aged eighty-three; she was also in blue cholera, and told me, "she knew she was dying, and I need take no trouble about her;" she was

quite right, and expired a few hours after—he survived about thirty hours, and though imbibing abundance of nourishment, never rallied. No precautions were taken against contagion here, and yet no other member was attacked. This fact seems to me to prove two more facts :—1st. That cholera is not contagious; and, 2dly, that the infirm and debilitated are those chiefly, if not altogether, attacked. Having now disposed of the question of contagion, I shall make a few remarks upon the disease, etc.

Was it then necessary that the whole household should take cholera in order to prove, that neither did the farmer catch the disease from a neighbour, nor the mother from her son ? Does it follow (even were it demonstrable that the farmer was not exposed to contagion), that nobody else ever caught the disease by contagion ? And how does the simple circumstance, that *one* old woman died of cholera, show that the infirm and debilitated are those chiefly, if not altogether attacked ? To the last proposition, be it observed, we subscribe, but demur to the logical process by which it is here deduced from a *single* case.

We could wish that Dr Alcock had been contented with his appeal to the Dublin Board, and spared the annotations, cases, &c., which follow, and are not particularly interesting. But, above all, it were well that he had not attacked such men as Dr Graves, Mr Surgeon Kirby, Mr Annesly, Mr Hamilton Bell, and others, with such awful ferocity. They are treated after a most sorry fashion, in some 50 pages of large type, gored by Bulls (pages 94 and 96), and tossed upon the horns of imaginary dilemmas—they are punned upon in the dead languages (p. 103, *et passim*), persecuted in prose, and pilloried in poetry. Yet their sole offence seems to have been, that they presumed to differ in opinion with Dr A. before they knew what his opinions were. Surely the punishment exceeds their demerits.

Decidedly the best thing in the work before us is the following sample of an Irish Bill, taken from Mr M'Coy's treatise on cholera :

Gratuity for burying three patients (exclusive of wages),	L.3	2	0
Medical attendance on these three patients, . .	16	7	2
Four coffins for *three* patients, ...	2	3	7½
Presented to the owners of the houses in which the three patients died, ...	6	17	11¼
Brandy for three patients, ...	1	6	9
Lime and brushes, ...	1	14	6

Total for the three, . . .	L.31	12	0

We have likewise been amused with the extreme independence of spirit, illustrated by the following defiance to critics :—

That criticism will be busy, I have no doubt; indeed it is the only return an author, however lowly, is certain to receive. To many this is a source of much concern :—

The prospect I open'd, the grove that I rear'd
Delighted my eyes, till the critic appear'd.

                              Professor SMYTH.

To *me* it is a matter of perfect indifference. Such "*nigræ* succus *loliginis* such œrugo *mera*," mere *verdigrease* and *malice*, *I* value as 1 should the yelpings of a few *babbling hounds.* That rational objections upon rational grounds should be made, I both expect, and am prepared to answer, as best I can, &c. (p. 8).

A whole chapter, at the end of the volume, is dedicated to the Tooting massacre, and we are here presented with a perfect chaos of proper and improper names, Mr Drouet, the Board of Health, Squeers, Mr Grainger, pigs, inquests, orphans, "navvies with jackboots," the Times, guardians, filth, and acts of Parliament. The ogre of Tooting may fairly claim the vacant honour of being the "best abused man in Britain."

Our readers will, we think, agree with us, that unprovoked polemics, and "rechauffés" of state inquests, should form a very small part of any work which bears the title of "A Treatise on Cholera."

Part Third.

CLINICAL REPORTS, LECTURES, ETC.

In the reports, which it is our intention to insert, from time to time, in this Journal, we purpose giving such cases as will serve to illustrate the practice pursued in the clinical wards. We are of opinion that, although individually, they might not be considered of sufficient importance to merit publication, collectively they may be made serviceable, in conveying to the profession a sketch of what is actually passing in the school. Many medical men, and especially such as practise in country districts, are, after all, more interested in the manner in which ordinary cases are treated in our large hospitals, than in the perusal of rare and extraordinary examples of disease, which seldom, if ever, come under their notice. They are desirous also of learning how the advances, which are continually being made in the science of medicine, influence the practice of it as an art, and how far the new theories, which are introduced into physiology and pathology, are consistent with their own experience in the observation and management of disease. It is with the hope of meeting their wishes in these respects, that we have established this section of the Journal. We have also thought it probable, that the numerous students who attend the clinical classes, would wish to see placed on record, and to possess an authentic account of those cases in which they were interested during the last years of their studies. The impressions of youth are vivid and lasting; and the oldest and most experienced practitioner generally retains a certain remembrance of the aspect of

those wards, and the particulars of those cases which first led him
to think seriously of the responsible duties of his profession. To
deepen these impressions, and to render them more definite and
lasting, will surely not be a work of supererogation.

It is proposed, then, every month, to give a short account of
cases, and their mode of treatment, with the substance of such re-
marks as were made by the Professor to the class at the time;
occasional abstracts of lectures, including points of diagnosis, or
such physiological and pathological views as bear upon practice;
and, lastly, notices of any kind that may prove instructive or use-
ful. We are only anxious to have it understood, that what
appears in this place, comprises short sketches of some of our
proceedings, and not elaborate reports of all that has been accom-
plished.

CLINICAL MEDICINE.—PROFESSOR BENNETT.

INTRODUCTORY OBSERVATIONS.—*November 9th*, 1849.

GENTLEMEN,—The study of medicine has been regarded in a two-fold aspect,
as a science and as an art; as regards the theory and the practice—the prin-
ciples and their application. We can trace the germs of theory and practice in
medicine to a very early period. At first, indeed, the art must necessarily
have consisted of experience and observation alone. It was Hippocrates who
added philosophy and reasoning to experience, and introduced those discus-
sions which led to the overthrow of empiricism, and final triumph of dog-
matism, six hundred years later, in the time of Galen. Since then, although
the medical profession has uniformly conjoined the results of reasoning and
experience, each of these two methods has had its favourite supporters.
Even at the present day, you will find persons who complacently call them-
selves practical men, who sneer at all modern advances in pathology. Others
are apt to attribute too much importance to theory, and regard with feelings
approaching to contempt, him whom they denominate a routine practitioner.
Hence, unfortunately, it too often happens that practical men are, compara-
tively, unacquainted with physiology and pathology; whilst those who de-
dicate themselves to the latter studies, are very sceptical as to the effects
of remedies. On this subject, Cullen observed, 80 years ago, what equally
applies at present :—" Every one now-a-days pretends to neglect theory,
and to stick to observation. But the first is in talk only, for every man has
his theory, good or bad, which he occasionally employs ; and the only dif-
ference is, that weak men who have little extent of ability for, or who have
had little experience in, reasoning, are most liable to be attached to frivolous
theories ; but the truly judicious practitioners and good observers, are such as
have the most extensive views of the animal economy, and know best the true
account of the present state of theory, and, therefore, know best where to stop
in the application of it."

There can be no doubt that a too exclusive attention either to theory or
practice, tends to circumscribe the usefulness of the physician, whilst it is the
proper cultivation of both which constitutes the rational medicine of the pre-
sent day. Thus, while we lose no opportunity, and employ all the means
which the improved state of science furnishes us with, of investigating the
morbid anatomy and causes of disease, we correct the theoretical conclusions to
which these alone might lead us, by practical experience and observation. Our
active and speculative powers should go hand and hand, so that, by a union of

theoretical knowledge and practical skill, we may advance both to their farthest limits. It is by cultivating medicine in this spirit that the clinical school of Edinburgh has rendered itself so famous. Those who taught the theoretical branches of medicine from their chairs in the University, were those who taught the practice in the wards of this Infirmary. They were enabled to demonstrate how, on the one hand, correct observation led them to just deduction, and on the other, how a knowledge of general principles caused them to be more accurate and acute in observation. Nor was this the only advantage derived from our system of clinical instruction. The student having an opportunity of hearing the opinions and seeing the practice of several teachers : at one time following the Professor of the theory, at another the Professor of the practice of medicine ; now the Professor of Materia Medica and Therapeutics, and now the Professor of Botany, or of Anatomy, obtained that freedom from exclusiveness, and that power of self-judgment which is so much to be desired in medical practitioners. Indeed, it is impossible to estimate too highly the advantages which have resulted from such a system, as it has been carried on uninterruptedly by the Professors of this University, for upwards of one hundred years.

Your object, Gentlemen, in coming here, is, I presume, to observe disease for yourselves. To observe, with advantage, two things are necessary : 1st, the correct appreciation of actual facts, as communicated to the senses of the practitioner or of his patient ; 2d, deducing from these a correct judgment as to the nature of the disease, and the proper indications of cure. Both these processes are very difficult. Some men have a natural aptitude for one, and some for the other. Again, they are frequently confounded together, some considering to be facts what are only theories, and others imagining that to be theoretical which is truly fact. Thus the assertion that a man is labouring under apoplexy, pneumonia, pericarditis, and so on, is only stating the opinion or theory, the practitioner holds with regard to his case, although such assertion is generally received as a fact. Again, when it is said that porrigo favosa consists of vegetable fungi, growing on the scalp, the statement, though generally received as mere theory, is truly a fact, inasmuch as the vegetations may actually be demonstrated, and rendered as visible to the eye as trees growing in a plantation. Indeed, the just distinction between theory and fact is a matter which has excited lively discussion, and hence the celebrated saying of Cullen, that there are more false facts than false theories in medicine.

If, in medical observation, we define a fact to be anything which is obvious to the well-cultivated senses of the observer, we, perhaps, approach as near accuracy as is possible. Remark, I say well-cultivated, because the senses require to be educated before they can receive proper impressions. In this lies the great difficulty in teaching practical medicine, for what is obvious to the sight of an experienced practitioner, is overlooked by the student ; the sound which is heard by the one, is inaudible to the other ; what the first feels distinctly is not tangible to the second. Now this instruction of the senses constitutes a kind of information which cannot be obtained from others ; you must acquire it for yourselves. Of late years, also, the detection of facts has been greatly facilitated by the appropriate use of instruments, whereby what at one time was conjectural is now rendered certain. Thus, the existence of many diseases, which could formerly only be arrived at by a happy speculation, or by a rare sagacity, is easily demonstrated by those who know how to employ, judiciously, chemical tests, microscopes, stethoscopes, pleximeters, specula, &c. To carry observation, then, to its utmost extent, we must learn how to avail ourselves of all these means in the examination of the signs and symptoms of disease.

On the other hand, Gentlemen, a sound and correct judgment is equally necessary, in order that the cultivation of the senses may lead to a proper end, and indicate the direction in which you must act for the benefit of the patient. For this purpose a certain degree of preliminary instruction is absolutely

essential before you can be qualified to attend an hospital with advantage. Indeed, I must take it for granted, that before coming here you are tolerably well acquainted with anatomy and chemistry ; that you have studied the institutes of medicine, that is, the present state of histology, physiology, and pathology, and that you have a notion of the materia medica, and of the effects of remedies on the economy. Thus prepared, you commence a series of visits to the bedsides of your fellow-creatures, labouring under disease, in other words, a course of clinical instruction.

What should we understand by clinical instruction ? It is not attendance on clinical lectures—it is not learning the opinions of your teacher—in short, it is not deriving knowledge from others. It is acquiring medical information for yourselves—it is the learning how to observe—it is that education of the senses to which I have alluded ; and, from thence, the formation of that sound judgment which will enable you to act for the benefit of your patients. Medicine is not only a science, it is an art. The laws and facts of science you will learn elsewhere. Here you must endeavour, keeping those laws and facts in remembrance, to found upon them an art. No art can be communicated. It must be learned by continual practice and experience ; and it has always appeared to me that the great aim of clinical instruction should be to enable the student to acquire that art for himself.

How are all arts acquired ? A young mechanic, when he makes a chair, follows exactly the same process as those who study what are called the fine arts. That is, he learns how to do what his master did before him. He imitates his plan of proceeding. His first attempts are rude and uncouth ; his subsequent ones are more perfect, until, at length, by continual practice, he is enabled to equal, or surpass, his instructor. In painting, sculpture, and music, there are principles which must be attended to, and which are learnt from others ; but no man can become a painter, a sculptor, or a musician, without obtaining practical skill as an artist, in the way now alluded to. It is thus, and thus only, that art descends from the old to the young. .

Now, it will be my endeavour to afford you every facility for learning medicine as an art. For this purpose the course will consist of two kinds of instruction. 1st, lectures ; 2d, the examination of, and the prescribing for, the patients by the student. In the lecture I shall direct your attention to the histories of the cases we have previously examined, notice the difficulties in diagnosis, or peculiarities they may have presented—speak of the treatment which has been employed, or of the recorded experience of those who are acknowledged to be worthy guides for our imitation—and lastly, touch upon such points of doctrine or speculation as may be serviceable to us in our efforts at cure. At the bedside I shall call upon such of you as wish to exercise yourselves in observation, to examine the patient, according to a plan which I shall subsequently communicate to you : then, having elicited the facts, to form a judgment as to the nature of the case ; and lastly, to suggest a plan of treatment, and prescribe for the patient. In doing this, numerous opportunities will present themselves for the communication of practical instruction in the use of various instruments, of improving the observing and reflecting powers, and of obtaining a familiarity with the method of combining medicines in extempore prescriptions.

This plan of clinical instruction has been for a long time practised on the continent, and especially in Germany. It was also followed by Dr Graves, in Dublin. I have myself taught in this way for the last nine years, to classes not exceeding twenty-five, at the Royal Dispensary ; and last year it was tried with the large University class, in this Infirmary. I have never found that it produced the smallest inconvenience to teacher, student, or patient, or was open to the slightest objection ; but, on the contrary, it has been productive of good to all parties. It gave me much pleasure to observe, last year, the readiness with which the students entered into this plan, and the evident advantage they derived from it ; nor can there be any doubt that, this session, we shall unite and co-operate in like manner, for our mutual advantage.

The medical faculty are aware, that in other seminaries, more especially in continental ones, great facilities are offered to the students for the study of special diseases. It has so happened, that whilst, in other schools, the means of clinical instruction have been greatly extended, here they have been contracted, and our choice of patients rendered more limited. The managers of this institution have gradually introduced regulations, with a view of creating a clinical school, independent of the University, which, while they have not very well succeeded in fulfilling that object, have effectually crippled, if not paralyzed, our efforts. On this subject it is unnecessary to enter into details. Suffice it to say, that with the double object of emancipating ourselves from the disagreeable position in which we have been placed, and of enabling us to extend our usefulness as clinical teachers, we have laid a proposal before the managers, to which we feel satisfied no reasonable objection can be made. Edinburgh, it is true, does not possess separate hospitals, for the treatment of cutaneous, syphilitic, eye, and children's diseases; but separate wards might easily be established, which the members of the medical faculty could render of great service to the student who was anxious to enlarge his field of observation. We have every hope, Gentlemen, that your interests will be attended to by the managers of the Infirmary; at all events, you may rest assured that they will ever be kept in view by us, and that we shall never rest contented until the Edinburgh School of Medicine is complete, in all the means necessary for studying every kind of disease at the bed-side.

THE ECTROTIC TREATMENT OF VARIOLA.

Various methods have been proposed, for the purpose of arresting the development of the eruption in variola, and preventing the cicatrices which are likely to form. The treatment, called *ectrotic*, (ικτιτρωσκω, to thrust out), has been practised principally in France. Serres, Bretonneau, and Velpeau, cauterized each vesicle as it appeared, with nitrate of silver, which immediately arrests its further progress. This is a very tedious process, while painting the surface with a solution of the caustic, causes so much pain and febrile disturbance, that it cannot be safely employed. Dr Oliffe, of Paris, recommended the vigo-plaster of the French Pharmacopœa; and, having seen, in some of the journals, that mercurial ointment, thickened with starch, has proved very serviceable in the practice of M. Briquet, and others, in the Paris hospitals, I tried it in the following tolerably severe case, which entered the clinical ward last year:—

CASE 1.—Mary Greig, aged 27, a servant, was admitted September 16, 1848. Says she has been vaccinated, but no mark is discernible. She stated that on the morning of the 13th, she was seized with rigors, followed by heat of skin, and other febrile symptoms. On the 15th, there appeared, on the forehead and face, a papular eruption, which, on the day of admission, had extended itself to the arms, wrists, trunk, and thighs. On examination, I found the eruption partly vesicular on the face, though still papular on the other parts of the body. She complained of sore throat, and difficulty of deglutition. The tongue and throat were red and swollen, scattered over with bright red points, some of which were already vesicular. The pulse was 90, and strong; tongue furred, but moist; the bowels confined; the urine scanty, with a slight lateritious sediment. She was ordered a *purgative powder; a saline mixture; an astringent gargle; and the following ointment*:—℞. Ung. Hydrargyri, ℥j— Pulv. Amyli, ℥ij M., *to be smeared over the face night and morning.* The disease went through its usual course, the eruption was confluent on the neck, arms, and trunk, but discrete on the inferior extremities. The secondary fever was rather severe, but she was discharged cured, November 4.

The ointment formed a thick hard crust, which, as it cracked and peeled off, was renewed by a fresh application. It was observable that she never complained of the face; there was no swelling of the eyelids, and when the whole was allowed gradually to separate from the skin, which was accomplished on the 14th of October, it was perfectly smooth, and of its natural colour. I de-

termined to try this practice again should a favourable opportunity occur, and the following very severe case, which you have observed throughout, has convinced me of its great advantage :—

CASE 2.—Ann Short, aged 19, servant, six months pregnant, was admitted November 27, 1849. Says she was vaccinated when a little girl, but picked off the crust. She is of a robust habit of body, and states that she experienced headache and other uneasy symptoms on the 21st. It was on the 25th, however, that the eruption first appeared on the face, and, on the 26th, had extended to the arms and trunk. On admission, she complains of considerable pain in the head and loins. There is intolerance of light; the voice is husky; there is cough, with scanty mucous expectoration. On percussion, the chest is everywhere resonant, but over the lower part of right lung a mucous rale is heard. The tongue is furred ; the tonsils, uvula, and mucous membrane of the mouth, generally red and swollen. There is great thirst and nausea, but no vomiting. The pulse is 108, strong ; the surface is hot ; the face is covered with an elevated papular eruption, of dark red colour, among which a few vesicles may be seen to have formed. The upper part of the chest and superior extremities more thinly covered with the eruption, in a papular form. The abdomen is only slightly affected, and the inferior extremities are free.—*Laxative—Saline Mixture.* On the 29th all the symptoms are increased ; the pain more intense ; the face, mouth, and throat, covered with vesicles, closely set together ; the bronchitis is more urgent, the voice hoarse, the eyes suffused, and intolerance of light intense. *The mercurial ointment, thickened with starch, was ordered, as in the last case, to be applied to the face—an astringent gargle—Lemonade for drink.* By the 5th of December maturation was complete over the whole body, and mucous membrane of mouth and throat. The pustules, in many places, extensively confluent. The pain, however, was diminished, but the bronchitis and sore throat continued ; no pain of face or swelling of eyelids, she picks off the plaster from around the mouth. On the 7th, there was some return of the fever; no inconvenience felt in the face; thick scabs adhere to upper extremities and trunk ; slight diarrhœa. December 12.—No fever; diarrhœa ceased ; appetite returned ; a most offensive odour emitted by the body ; the scabs have separated from the neck and upper extremities, but are still adherent to trunk and inferior extremities. An abscess formed over the whole surface of each foot below the epidermis. *Soles of feet to be kept moist with tepid water.* December 17th.—The mercurial plaster is now separated from the face, the surface of which is quite smooth. The arms and shoulders are deeply indented with pits, where the scales have separated. The cuticle over the soles of the feet is separating, and a purulent discharge flows from the surface. December 21st.—This woman is now convalescent. There are no pits on the face, except round the mouth and that portion of the forehead in contact with the hair, which was not covered by the plaster.

This was a very severe case of confluent small-pox, and the good effects of the mercurial plaster in locally modifying the intensity of the inflammation, and preventing cicatrices, were unequivocal. The absence of swelling in the eye-lids, the freedom from pain in the face throughout the whole course of the disease, and the presence of pit-marks *only* in such situations there as were not covered by the plaster, show most satisfactorily the advantages of the remedy.

TREATMENT OF SCABIES BY SIMPLE LARD.

Since the connection of scabies with a peculiar insect (*Acarus Scabiei*) has been understood, it has been suggested, that the good effects of sulphur ointment are not so much to be attributed to any specific properties of the sulphur, as to the destructive operation of the fatty matter, which, by stopping up the respiratory pores of the insect, causes its death. Sometime ago I saw in the "Annales de Thérapeutique," an account of the treatment of scabies by Mr Griffi of Sardinia, who cured the disease by the simple application of olive oil

or lard. The following cases, which have occurred in the clinical wards, will illustrate the effects of this practice :—

CASE I.—A boy (of whose case I cannot at present find the record), about 10 years of age, entered the clinical ward at the commencement of last session, with the back of his hands covered with numerous ecthymatous pustules, associated with vesicles of scabies, which were most abundant between the fingers and on the wrists. They had existed for some weeks, and caused great irritation and itching. The hands and wrists were ordered to be covered with simple lard morning and night. On the next day it was found that the parts were dry, and that he was continually irritating them by scratching. To prevent this, and to keep the parts moist, the hands and wrists were ordered to be enveloped in oil-silk bags. A continuance of this treatment for five days entirely removed the eruption.

CASE II.—Anne Daly, aged 17, a bleacher, was admitted, November 20, 1849, with an eruption on the hands and flexor-surface of the arms, consisting of large ecthymatous pustules, mingled with numerous accuminated vesicles of scabies. These latter were most numerous between the fingers. The disease was of twelve days' standing, and no contagion could be traced. The affected parts were ordered to be smeared with simple lard, and enveloped in oil silk bags, as in the last case. This practice was continued until the 26th, when the pustules had disappeared, leaving bluish-red spots devoid of cuticle. A few vesicles were still visible. In two more days these also had disappeared, although she was not dismissed until December 4th, when no trace of the eruption was discernible.

CASE III.—James Monro, aged 20, admitted November 7th, 1848. His hands, arms, and lower portion of abdomen are scattered over with vesicular scabies, which everywhere produces the most intense itching, especially at night, and when near a fire. On the arms numerous hemorrhagic points and deep grooves, in connection with the vesicles, have been produced by scratching. There are similar appearances on the abdomen. The hands and arms were ordered to be smeared with lard twice daily, and enveloped in oil-silk. In six days the eruption had disappeared from these parts. On the abdomen, however, it still continued, and the lard was then ordered to be also applied there. Here it could not be covered with oil-silk, and the surface was continually dry. Still great amelioration was produced, and he was discharged cured, November 28th.

CASE IV.—There is at this moment in the clinical ward, a lad named John Harley, aged 17, a labourer's son, affected with intense emphysema and bronchitis, of which diseases it is unnecessary now to speak. On admission (December 3, 1849), the hands, flexor-surface of the arms, and abdomen, were, as you saw, closely covered with vesicular scabies, which induced great itching and scratching, and, as a result of the latter, grooves and bloody marks of the nails. On the 4th, the hands were smeared with lard, and enveloped in oil-silk, as in the former cases. On the 8th of December the eruption on the hands and wrists was completely cured, but still continued in all its intensity on the arms and abdomen, clearly showing the curative power of the remedy. The lard was now ordered to be applied to the arms, and then to be enveloped in oil-silk to keep them moist. On the 15th, the arms were freed from the eruption. Lard was now ordered to be rubbed three times a-day on the abdomen.

It is well known that scabies may be cured by numerous local applications, although experience has generally decided that sulphur-ointment is the one which is most certain and rapid in its action. The cases above detailed, with several others which might have been cited, have satisfied me that the efficacy of the ointment is altogether dependent on the unctuous matter, and that the sulphur has little to do with its therapeutic effects. It appears to me important, however, that the parts should be kept moist, and that the use of oil-silk for this purpose, greatly facilitates the cure. ˙ The action of fat seems to render pustules and vesicles abortive, both disappearing in a few days, leaving the skin they covered slightly reddened, with the shrivelled walls of the pustule and vesicle more or less adherent to it.

CLINICAL SURGERY.—PROFESSOR SYME.

ON SPERMATOCELE AND HYDROCELE.

W. R., aged 50, applied on account of a large scrotal tumour of eleven years' standing, which had progressively increased. It had been regarded as a hernia, and induced the patient to relinquish his situation as a gamekeeper; but from its distinct fluctuation, and its not presenting any enlargement at the ring, was readily recognised to be a collection of fluid. The testicle could be distinctly felt at the lower part of the swelling, which, in other respects possessing the ordinary characters of hydrocele, was treated as one.

Mr Syme stated, that he had long ceased to employ port-wine for injection into the tunica vaginalis, on account of its effect proving very uncertain ; and that having subsequently used a mixture of the tincture of iodine with three parts of water for this purpose, he had, during the last five years, always injected the tincture alone, and without a single case of failure or unpleasant effect, either in public or private practice. The quantity required was about a teaspoonful, or as much as filled a common sixpenny pewter syringe, which was the most convenient instrument for the operation, as the substance composing it allowed the nozzle to be readily adapted to the canula of the trocar. The fluid when injected was allowed to remain, and while producing the effect desired with absolute certainty, seemed to occasion less pain than any other agent in past or present use.

When the tumour was punctured, the fluid which issued through the tube, to the amount of a pint or more, appeared somewhat turbid, and this was attributed to its probably containing the scales of cholesterine, which are frequently met with in albuminous fluid long pent-up in close cavities. The tincture of iodine, therefore, was injected as usual. But when a little of the fluid was poured from the basin, in which it had been received, into a glass vessel, in order that the gentlemen present might more readily examine it, the absence of scales, and the peculiar opalescence observed, at once suggested the idea of spermatocele, and an appeal to the microscope confirmed this suspicion, by bringing myriads of spermatozoa into view.

Had the true nature of the case been ascertained in the first instance, injection would not have appeared expedient, since spermatocele has not only resisted the means of treatment which have proved sufficient for the remedy of hydrocele, but has also shown a disposition to resent with violence even liberties of a much slighter kind. In illustration of this, there was mentioned a case in which the loss of a valuable life had been nearly sustained, from puncture alone without injection. The patient, a distinguished military officer, had twice had the fluid simply drawn off, in London, by Mr Liston ; on the first occasion with so little inconvenience, that, upon the second, he ventured to proceed immediately by railway to Scotland, where he became very ill, and was attended by Mr Syme for inflammation of the parts concerned, with sloughing of the scrotum, from which his recovery, though ultimately completed, was long doubtful. It was, indeed, the obstinacy of the disease, when subjected to the treatment of hydrocele, which had led Mr Liston to microscopical research for an explanation of the reason that " cysts which have contained fluid of this kind do not undergo the same process when inflammation is excited in them as serous cysts do ; or, in other words, that a cure of such hydrocele, by injection, is not to be looked for ; " [1] and the established practice seemed to be limited within the use of palliative measures.

The result of this case was, therefore, watched with interest; and when, after passing through the usual course of a simple hydrocele, under the same circumstances, the swelling quickly subsided, with complete restoration of the testicle to its healthy state, it naturally suggested another trial of the same kind. For

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[1] Med.-Chir. Transactions, 1843, p. 218.

this an occasion happened at the time to present itself, in the case of a gentle-
man, who had had a hydrocele tapped about twenty years ago, by Sir Astley
Cooper, and afterwards injected with port-wine by another surgeon in London,
but still suffered from it. The tumour was in every respect very similar to that
just mentioned; and when punctured, was found to contain the same sort of
turbid opalescent fluid. The suspicion of spermatocele was confirmed by the
microscope, which detected abundance of spermatozoa; but everything went
on satisfactorily after the iodine was injected, so that before the end of three
weeks the testicle had very nearly regained its proper size and consistence.

The two cases just related afford encouragement to attempt the radical cure
of spermatocele by the injection of tincture of iodine, although other means have
been found to fail; and in further testimony, as to the efficacy of this agent in
the remedy of hydrocele, the following case, related by the gentleman who was
the subject of it—treated at his desire in the hospital—may be added. He is
about twenty-five years of age, and was admitted on the 18th of November.

" When a boy, about ten years of age, I got one of my testicles bruised on
horseback, which caused hydrocele. Before I thought of consulting a surgeon
nearly ten years had elapsed, by which time it had attained the size of a goose's
egg. I applied first to the late Dr Hannay of Glasgow, who punctured it with
the intention of injecting port wine, but finding the testicle somewhat enlarged,
he desisted, saying, that to employ the radical cure in my case would be attend-
ed with danger. The following day the hydrocele was as large as ever, upon
seeing which, he ordered me to keep my bed for a fortnight, hoping that there
might be a spontaneous cure; but in this we were disappointed.

" In the spring of 1847 I was in Berlin, where, hearing of the many cures
performed by Dr Dieffenbach, I consulted him. In curing hydrocele he almost
invariably performed the operation of incision, which he applied in my case.
He performed the *operation* merely, the stuffing of the wound in the tunica
vaginalis and bandaging being done by an assistant. In eight days there was a
high degree of inflammation, attended by suppuration, and large quantities of
matter were discharged; the stuffing, which was slackened by the suppuration,
was now daily extracted, the wound was cleared of it in about a fortnight
after the operation, and the swelling by this time was considerably reduced.
There was fresh stuffing put into the wound daily, which was continued until
it had nearly closed; this took place about five weeks after the operation.

" It may not be out of place to state, that there was much attendant suffering,
tension of the bladder, gastric fever, and last of all, an abscess formed upon the
groin, which had to be opened. I was thus kept almost bedfast for two months.
Dieffenbach at last examined me, about nine weeks after the operation,
with the result of which he seemed satisfied, and prescribed a lotion for a hard-
ness which existed. At this time the swelling was still about the size of a
hen's egg.

" Upwards of a year after, I had an opportunity of speaking to Dr Angelstein,
who was appointed to Dieffenbach's situation in the hospital (pro tempore).
He was the first to convince me that I was not cured, and was most anxious
that I should allow him to try the injection of port-wine; but as I had heard
Dieffenbach declaiming against this ' English method,' I determined not to
submit.

" I next came in contact with Dr Bühring, and mentioned to him the circum-
stance of his uncle's operation having proved ineffectual. He now made an at-
tempt to cure me by means of electricity. He first stuck two rows of needles
on the surface of the scrotum, opposite the testicle, about an inch apart, then
after tapping, he introduced a lancet and scarified the tunica vaginalis; the
electro-magnetic apparatus was now set in motion, and the fluid kept stream-
ing along the needles for some time, which caused a burning pain within. In
two days there was apparently a sufficient degree of inflammation excited, and
every reason to think that there would be a permanent cure; but I was again
doomed to disappointment. Dr Bühring now advised me to submit to the ope-

ration of excision, to which I would probably have consented, had I not about this time received a letter from a young surgeon, who had just finished his studies at Edinburgh ; he urged me strongly to delay any further operation, relating the success which attended Professor Syme's operations, and advising me on my return to Scotland to put myself into his hands. I did so, and have now the greatest pleasure in stating, that, by an almost painless operation, and after three weeks' partial confinement, I am completely cured.—T. C.

 "Edinburgh, 12th December 1849."

Part Fourth.

PERISCOPE.

MORBID ANATOMY AND PATHOLOGY.

OPTICAL TEST FOR ALBUMEN IN PATHOLOGICAL FLUIDS.

Biot was the first to discover the property possessed by albumen, of rotating the plane of polarization of a ray of light transmitted through its solutions, and to ascertain that the degree of angular deviation was proportionate to the concentration of the solution.   Bouchardat, after a few experiments upon the albumen of the egg, and one trial of human serum, calculated the molecular rotatory power of albumen at 27° 42′.   He was prevented from extending his researches by the imperfection of the polariscope which he used, as it did not permit a polarized ray of the requisite colour, or of sufficient intensity, to be passed through a thick stratum of serum.

M. Becquerel has made many observations upon serum, and other albuminous fluids, by means of a modification of the apparatus recommended by Biot and Mitscherlich.

A ray of light, polarized by means of a Nicol's prism, is transmitted through the axis of a tube, of nearly eight inches (twenty centimetres) in length, terminated at each end by a flat plate of glass, and capable of holding the fluid under examination. Between the tube and the observer's eye is interposed a prism of Iceland spar, cut, however, so as to transmit a *single* image.   This prism is situated in the axis of a graduated circle, round which it can be rotated, and from which the degree of rotation may be read off with great exactness.   These are the essential parts of the polariscope.   In using it, the analysing prism must first be rotated till no trace of the polarized beam is transmitted to the eye.   If now the tube be filled with an albuminous fluid, it will be found that light is transmitted, and that, in order to obscure the image, the analysing prism must be further rotated to the right or left.   The angle described by the additional rotation of the prism is then read off upon the scale.

In examining serum, and other organic fluids, M. Becquerel has, *by direct chemical analysis, confirmed the indications of the optical test*, and has constructed a table, indicating, for each *minute* of deviation, the corresponding amount of albumen.

He concludes—1. That the albumen held in solution by serum and other organic fluids causes the plane of polarization of a transmitted ray to deviate to the *left*.

2. That the degree of deviation is proportionate to the amount of albumen

contained in each liquid, and that, by means of the angle, the amount of albumen may be directly calculated.

3. That the "molecular rotative power" for albumen is about 27° 36′ ; and that, in examining a fluid, each *minute* of rotation may be held equivalent to ·18 parts of albumen per 1000.

4. The possible error of observation does not exceed four or five *minutes*, and hence cannot affect the calculated result by more than ·1 per 100—a degree of accuracy which can be attained by no known mode of analysing albuminous fluids.

Becquerel, who has applied this new optical test to more than 150 specimens of serum from the blood, and to 50 pathological fluids, has never met with an instance in which it contradicted the results of direct chemical analysis. We need hardly say, that a test of such delicacy would be a most welcome addition to our present rather imperfect means of examining morbid fluids for albumen, were we assured that no other substance could interfere with its indications. In the progress of Bright's disease, it is of great importance to watch, from time to time, the amount of albumen contained in the urine. Hitherto we are not aware that any more accurate test has been applied, than that commonly employed by Dr Christison—viz., to estimate the amount of albumen by the depth which it occupies in the tube in which it is heated. The test proposed by Becquerel would be quite as easily applied, and, if other substances met with in urine do not possess optical properties analogous to those of albumen, would afford far more satisfactory results. The apparatus requisite for the repetition of Becquerel's experiments is difficult of construction, and, consequently, expensive. Those who may chance to possess it, and wish to investigate the subject, will do well to study the mode of manipulation described in the *Gazette Médicale*. We would, in the meantime, suggest, that the simultaneous presence of sugar, or of certain other substances which have the property of circular polarization, may impair the value of the new test for albumen. As examples of the results obtained by Becquerel, we append the following :—

1. *Healthy Serum.*

Chemistry shows that its albuminous constituents range between 75 and 85 per 1000.

The *polariscope* indicates a rotation angle of 7° 30′ on an average—*i. e.*, equivalent to 81 parts of albumen per 1000.

2. *Serum in Granular Disease of Kidney.*

The serum, it is well known, is impoverished from loss of albumen.

The *polariscope*, in four cases, indicated an average deviation of 5° 21′— *i. e.*, 57·78 per 1000.—*Becquerel in Gazette Médicale*, 1849, p. 929.

CHEMICAL OBSERVATIONS ON THE EVACUATIONS AND BLOOD OF CHOLERA PATIENTS. BY BECQUEREL.

In six analyses of matters vomited by patients, to whom no drink had been given, except water and "eau de seltz," Becquerel obtained the following results :—In four cases the fluid had an acid reaction ; in two it was neutral. Its density varied from 1006·03 to 1021·40. The flocculent matter, separated by filtration, was regarded by M. B. as coagulated albumen, and varied in amount from 1·94 to 11·24 per 1000. The filtered liquid likewise contained albumen in every case. In two the quantity was exceedingly small, in the other four it varied from 5·11 to 31·50 per 1000. In the last case there was an admixture of the principle termed albuminose, which is incoagulable by heat, but coagulable on the addition of alcohol. The amount of albumen in the filtered fluid was, in every case, directly proportionate to the specific gravity of the fluid vomited, and to the amount of albuminous flocculi which it held in suspension. The proportion of albumen was greatest in matters vomited early in the disease. The amount of chloride of sodium varied from 2·35 to 8·24, in

1000 parts, which, if we contrast it with the other solids held in solution, and probably derived from the serum of the blood, is unexpectedly large.

Four analyses of the dejections were also made. In all, the reaction was alkaline, from the presence of a small proportion of ammoniacal salts. The density varied from 1004·20 to 1011·04. In every case albumen was detected, both in solution and in the coagulated form, and the relative proportion between the chloride of sodium and solid residuum, obtained on evaporating the stools, was the same as that observed in operating on the matters vomited. The amount of flocculent insoluble matter varied from 2·05 to 7·14 per 1000. The quantity of albumen in solution, was in two cases so trifling that it could not be weighed; in the other two cases it was represented by the small numbers 3·22, and 4·51.

The serum of the blood was analysed in four cases, bled at the very commencement of the period of reaction. Its density varied between 1035·1 and 1044·2 ; and the solid constituents of 1000 parts averaged about 107·4, of which from 63·1 to 84·66, consisted of pure albumen. The chloride of sodium existed in large proportion in the serum ; instead of the normal quantities, 5 or 6, M. Becquerel found 12·2, 7·38, and 8·82, in three cases which he examined. The amount of fatty matters was double the average—the numbers in two cases being 4·7 and 4·23. The extractive matters, in which Becquerel includes all the salts, except the chloride of sodium, were prodigious in quantity—their proportions in three cases being 31·7, 32·68, 38·48, per 1000. The author likewise gives the following complete analyses of the blood, drawn from two adult male patients, shortly before their death :—

Case 1.			*Case* 2.		
Specific gravity, - 1074·1			Specific gravity, - 1075·		
Fibrine, - - -		1·88	Fibrine, - - -		6·50
Albumen, - - -		51·80	Albumen, - - -		69·35
Globules, - - -		179·60	Globules, - - -		160·20
Chloride of Sodium, -		6·61	Fat, Extractive, and Salts,		20·
Fat, Extractive, and Salts,		27·59			
			Total Solids, - -		256·05
Total Solids, - -		267·48	Water, - -		743·95
Water, - -		732·52			

The most striking peculiarities in these analyses are, the high density of the blood, the great diminution of its watery constituent, the high proportion of globules, of chloride of sodium, and of other salts included, with the extractive and fat, the variable proportion of fibrine, and the decided diminution of the albumen.—*Archives Générales de Médecine,* Oct. 1849.

M. Becquerel's analyses confirm, in many important particulars, the observations made in this country during the recent epidemic. The existence of salts in cholera blood, in a proportion equalling or exceeding, that observed in health, was clearly proved in the analyses of Dr Garrod and of Dr Robertson. The increased proportion of globules, first announced by Lecanu, has been recognised by every chemist who has investigated the subject. The variable proportion of fibrine is also an old observation. But to M. Becquerel is fairly due the merit of having pointed out the considerable increase of fatty and extractive matter,—of having shown, that this is the true cause of the inspissation of the serum, and not an increase in its albuminious constituents, which, on the contrary, M. B. always found diminished. Most observers have, we are convinced, believed, that the dry residue of cholera serum, evaporated af 212°, consisted of salts and of organic matter, which they assumed to be almost exclusively albumen ; hence, in calculating the amount of this principle, they contented themselves with burning a known weight of dried serum, and then substracting the weight of ashes left. It is now tolerably clear, that during an attack of cholera, a portion of serum leaves the circulating system, and is poured into the alimentary canal in the form of *rice-water* evacuations. The

flocculi suspended, and the albumen contained in these evacuations, are organic solids, abstracted from the serum during the morbid process. "The notable diminution of the albumen of the serum is explained by its presence in the intestinal secretions." "As to the augmentation of the fatty matters, whose proportion is nearly tripled, may it not be due to the absorption of fat which takes place with such rapidity in cholera cases? *I cannot explain the occurrence of the large proportion of chloride of sodium* in the evacuations." The water, withdrawn from the circulation, is found in the intestines; and, in proportion to the amount of fluid thus abstracted from the blood, M. Becquerel has found a relative concentration of the globules, of the chloride of sodium, of the extractive matter and different salts which do not quit the vessels.

Becquerel has also made a few observations upon the urine of cholera, with a view to determining the proportion of cases in which albumen appears in the first urine passed. His cases were too few to warrant general conclusions. Of 100 *first* urines tested in the Cholera Hospital in Edinburgh, at least 81 contained albumen.

MEDICINE.

CASE OF SPASM OF THE ŒSOPHAGUS, AND OF THE LARYNX, TERMINATING FATALLY.
BY DR VIGLA.

A man, aged 27 years, a gilder on metals, was seized, on Monday, the 13th September 1847, with cephalalgia, cough, and difficulty of deglutition. On the following day, when first seen, he had no fever, and the tongue was slightly furred. An emetic was ordered. On the 16th he complained of bad taste in the mouth, and of difficulty in swallowing. An examination of the pharynx, however, revealed no obstacle, and he drank without any apparent constraint. The tongue was covered with a dense white coat; the respiration was free; the pulse 84. On the 17th he was seized with extreme dyspnœa, and asphyxia had already commenced; but the voice was clear, and the speech articulate. On auscultation the pulmonary vesicular murmur had almost disappeared, especially on the right side, and was replaced by a suppressed and deep snoring sound. He expectorated a viscous mucous matter, resembling that of phthisical patients. He could not swallow. Every mouthful of liquid was arrested in the pharynx, and followed by considerable efforts at vomiting, and the excretion of the sputa just spoken of. He also felt a sense of constriction at the superior part of the sternum, and lower parts of the neck. No appreciable alteration in the throat could be discovered. The skin was hot—pulse 135 to 140, strong and regular. He was now bled to 325 grammes. The blood flowed in a large stream, and the clot, when afterwards examined, was darker than usual, and not buffed. In the evening there was the same dysphagia, some vomiting, respiration forty in the minute, pulsations 144. A purgative was ordered, which produced four or five evacuations in the night; and a blister over the upper part of the chest. During the night he became comparatively calm, but did not sleep. On the morning of the 18th the symptoms returned with increased violence. There was dorsal decubitus, in which position he respired more easily—pulse 128, regular; skin warm; thirty-six respirations in the minute, irregular; face contracted, and of violet colour. Pharynx easily examined, and observed together with the isthmus of the fauces, to present its natural appearance. Slight cephalalgia; intelligence perfect; strength good, and he possessed great moral courage. On percussion, the sound was obscure, but equal over the whole of the chest. On auscultation the vesicular pulmonary murmur almost completely absent on the right side, behind; very feeble in the corresponding part on the left side, but more audible in front and at the two sides. Everywhere over the chest there was a snoring murmur, most intense over the upper part of the sternum. In the evening M. Barth also saw the patient all the symptoms and physical signs were found to be the same as

in the morning. M. Barth diagnosed spasm of the pharynx and trachea. It was ascertained that he had never received a bite, and the disease was separated from hydrophobia. A valerian and belladonna injection was ordered, and a plaster of diachylon and camphor to the chest. He passed the night tolerably well, and slept three-quarters of an hour ; sleep, however, was greatly interrupted by the frequent vomiting. Pulse, 108 ; skin not so warm. In the afternoon the urgent symptoms again returned, and sinapsims were applied to the feet. In the evening there was a remission, but he died during the night.

Autopsy, twenty-four hours after death.—The most attentive examination could not detect any alteration at the base of the tongue, in the larynx, pharynx, or œsophagus, the mucous membrane of which was decolorised. The trachea, at its second ring, presented a livid colour, which was continued into the ultimate divisions of the bronchi. These latter were dilated, so that they could be opened with the scissors until they reached the surface of the lung, when they presented the same calibre as at their second or third divisions. No mucus resembling that ejected during life could be observed. The bronchial glands and cellular tissue surrounding the trachea presented a red coloration, similar to that of the mucous membrane of the air passages. The diaphragmatic and pneumo-gastric nerves, isolated from the pleura and cellular tissue, were healthy throughout their course. The pleuræ were free from adhesions. The lungs were emphysematous, crepitant, and of the red colour observed in cases of asphyxia. On section, there escaped a reddish black fluid, and a considerable quantity of air. The heart was soft and flaccid. The right auricle contained a small fibrinous bluish clot, and the ventricle of the same side a little blackish blood, having the consistence of gooseberry jelly. The blood which flowed from all the organs was semi-fluid and blackish. Bile black,and like syrup. Brain and spinal cord, and their membranes, healthy.—*Gazette des Hôpitaux,* November 17, 1849.

[This very interesting case exhibits in its leading features and fatal termination, a close resemblance to hydrophobia. It is true, there was no fear of water, but this has been observed in some undoubted cases of that disease. On the other hand, the constriction of the throat, the difficulty of deglutition, the viscous expectoration, the febrile symptoms, and the absence of post-mortem lesion, are the same. Its occurrence, free from all suspicion of inoculation, is favourable to the ideas of those who, with ourselves, are of opinion that spasms of the larynx and œsophagus may sometimes occur, closely resembling hydrophobia, and even causing death, without any introduction of a morbid poison into the system. We are aware that such facts have been seized upon, with a view of building up an exclusive hypothesis, as to the non-communicability of rabies from animals to man. But we see no necessity for adopting exclusive theories in cases of spasmodic diseases. Tetanus may be caused by exposure to cold, by a wound, and by a poison, strychnia—and the symptoms in each case may be identical—and why may not the same group of symptoms, usually called hydrophobic, result also from different causes? Certainly the case above detailed is in favour of this supposition.]

THE GENERAL PARALYSIS OF THE INSANE.

M. Pinel, in a letter inserted in the *Union Médicale,* has stated the general results of his observations on the above subject during a period of twenty years. He considers the general paralysis of the insane, to be a complication of two diseases altogether different, and that it does not constitute a special pathological condition. Sometimes the motor disease commences first, as was observed by Dr Baillarger ; at other times it is preceded by mental derangement, as observed by Dr Brierre de Boismont. The two affections may occur simultaneously, in which case it may easily be seen that they have no necessary connection. For the paralysis sometimes disappears after a shorter or longer time, whilst the insanity presents its usual features ; or the latter may cease,

and the paralysis continue until death, or for a period more or less long. Indeed, so far as the general paralysis of the insane is concerned, it differs in no way from a similar paralysis in persons not insane; and, although M. Boismont thinks the contrary, M. Pinel is quite satisfied on that point. This affection, though generally fatal, is occasionally followed by recovery. Further, paralysis in the insane progresses much more rapidly than in simple cases. Sometimes the tongue alone is for a long time affected, and the embarrassment of speech, or stuttering, may disappear for a period more or less long, and then return. Its re-appearance is generally preceded by cerebral congestion. The superior extremities are usually first affected, and sometimes a considerable time elapses before the inferior ones are paralysed. Occasionally the palsy is general from the beginning, when death takes place with great rapidity. It is, especially when the motor lesion commences at the same time with melancholic delirium, that practitioners who are not in the habit of observing the insane, are liable to overlook this fatal complication, of which M. Pinel gives a very instructive example.—*L'Union Médicale*, November 27, 1849.

NEW MODE OF PERCUSSION INTRODUCED BY M. MARTIN SOLON.

This method consists in applying one hand spread out over the region to be percussed, and striking upon it more or less forcibly with the shut fist of the other. A commotion is thus produced in the deep-seated organs, which, when diseased, often manifest pain, and which may be elicited by *contre coup* even in distant organs. Thus a patient may have an obscure affection of the liver. He may be percussed, in the manner described, on the right side, over the false ribs, without any pain, whilst doing so on the left side, in the splenic region, may induce a pain on the right side by *contre coup*. M. Martin Solon has observed several similar facts in his practice. In ordinary percussion, whether on the fingers or on the pleximeter, we judge of the dulness or sonoriety, without taking into account the sensibility of the patient; in practising the method described, both the sound and the pain unite to further the diagnosis.—*Journal de Méd. et de Chirurgie. Pratiques*, June 1849.

SURGERY.

CASE OF RUPTURED BLADDER.

A boy, about ten years of age, standing on a dray or float, on which there was a cask of sugar, very imperfectly secured, unfortunately occupied the space between the front of the cart and its lading, when the horse accidentally fell, and the cask, rolling forward, jammed him against the cart, and crushed him frightfully. He was brought to hospital with his pelvis extensively shattered, his left thigh broken, just below the trochanter, and, as very soon appeared, his bladder ruptured also. He suffered intense pain, especially in the abdomen, which he could scarcely allow to be touched, but, as the obvious injuries were so extensive, the pain was chiefly attributed to them; and he was placed in bed, and had some warm drink and other restoratives administered, previous to being dressed. He very soon expressed a desire to pass his urine, but could not void a drop, and a catheter was then introduced, which drew off a very small quantity, deeply tinged with blood, but afforded no relief. These symptoms continued with great severity for several hours, except that sometimes urine flowed through the catheter, as if, on these occasions, its beak had been pushed through the rent into the depôt beyond it; but, generally, it did not; and in either case there was little or no alleviation of the distress. After the first twelve hours, the instrument always came out stained and blackened by sulphuretted hydrogen, and Mr Porter, under whose care he was, remarked this as being a fatal symptom, having never seen recovery after it,—a prognos-

tic in which he was most agreeably disappointed. At the end of about forty-eight hours, a small abscess pointed at the left side of the navel, which, being opened, gave exit to an immense quantity of fœtid pus and urine : this aperture became fistulous afterwards, and discharged clear and healthy urine whilst he remained in the hospital, which was more than three months. This boy recovered, and was seen and examined by several surgeons more than a year afterwards ; the wound in the abdomen healed, and the water passed by the natural canal—but, as to the pathological process by which so fortunate a termination was obtained, no one could form a conclusive opinion. It may be surmised, that the extravasated urine had been more or less circumscribed—that it had induced inflammation, which poured out coagulable lymph, and thus formed a cyst, within which the fluid was completely insulated ; but how it came to be regularly expelled afterwards, or what contractile force was exerted on it—in a word, how this newly-formed sac came to perform the functions of a bladder, as it seemed to do, is a problem, the solution of which surpasses my ingenuity.—*Rynd on Strictures*, p. 48, 1849.

[The difficulty of explanation here expressed would be greatly, if not quite, removed, by comparing this very interesting case with one recorded by Mr Syme, in the number of this Journal for January 1848.—(Case of recovery from Rupture of the Urinary Bladder.) In that case, fluctuation being felt between the umbilicus and pubes, an incision was made through the integument, with the effect of allowing egress for the urine, and permitting the introduction of a finger, to ascertain its source. It was then found that the bladder had been rent in the fore part—anteriorly to the reflection of the peritoneum—and that the urine had escaped through a split between the *recti* muscles. There can be little doubt that, in Mr Porter's case, the same process took place.]

TREATMENT OF ANEURISM BY ELECTRO-PUNCTURE.

At the last meeting of the Academy of Medicine, M. Abeille, assistant physician to the Val-de-Grace, read a memoir on the above subject, of which the following is a summary :—

A female, 67 years of age, was affected with a tumour of the size of a hen's egg, which projected between the scaleni muscles, and presented all the characters of aneurism. It was, in fact, a pulsating tumour, the pulsations being isochronous with those of the heart ; pressure on the artery above the tumour reduced it partially in size ; pressure over the tumour gave rise to a sensation of *fremissement* under the hand, and the ear detected a very sensible *bruit de souffle*. From these symptoms, and particularly from the fact, that pressure above the tumour arrested the pulsations of the axillary and radial arteries, it was concluded, that the subclavian presented the anomaly of a common origin with the carotid, and ascended over the clavicle to penetrate between the scaleni muscles. All the medical men who examined the tumour were of opinion that it was arterial, and the operation of electro-puncture was accordingly performed on the 10th February 1847. The pile employed was composed of twenty pairs of zinc and copper plates ; the needles were steel, four in number, two to two and a-half inches long, and covered with an isolating mastic to within one line of the point and two of the head.

The patient having been etherised, the needles were passed into the aneurismal sac, and the battery set to work. Strong sparks were elicited, and the operation continued for thirty-seven minutes. On awakening, the patient complained of atrocious pain, attended by convulsive movements in the muscles of the arm and wrist.

Within five minutes after the commencement of the operation the tumour began to solidify ; the pulsations were less distinct, and the pulse nearly disappeared. On extracting the needles, pressure, equivalent to a weight of two pounds, was applied to the surface of the tumour. It was then quite firm, and without pulsation or bellows-sound. Twenty-four hours afterwards the pulse was totally absent in the radial artery ; the arm was numbed and cold. As

symptoms of cerebral congestion manifested themselves, it became necessary to practise two bleedings. After the fourth day the tumour began to diminish in size ; on the tenth day it was much smaller, and on the eighteenth diminished by one-half. It now remained stationary for a few days, then began to diminish again, and gradually disappeared. Thus, on the thirty-seventh day, the skin appeared perfectly flat ; on making pressure, an oval, flattened, and firm body was felt in the place occupied by the sac ; and even three months afterwards some traces of the induration could be perceived. At this period the artery had acquired a slight degree of development just above the tumour ; and three branches, not before evident, and supposed to be the vertebral, inferior thyroid, and posterior scapular, arteries, were seen to radiate from this point.

It is now two years and a-half since the operation was performed, and the cure appears to be complete. The artery has not acquired any increased degree of calibre, and it requires excessive pressure with the finger to discover any trace of the old sac.

This, it must be confessed, is a brilliant success ; and the fact, now indisputably proved, that electricity coagulates the blood in the living artery, may lead to further applications ; but we must not conclude, from a few successful cases, that the new agent is to throw into the shade the discovery of Hunter. Even from the confession of M. Abeille, the pain occasioned by electro-puncture, in cases of this kind, is of so violent and distressing a nature, that the usual operation of ligature is preferable in all cases where it can be applied, as in aneurism of the femoral artery, &c. Besides, the accidents which may attend electro-puncture are fully equal to, if not greater than, those of ligature,—hemorrhage, cauterisation of the sac or skin, inflammation and suppuration of the sac, &c.

I should not omit to mention, in reference to the above, that M. Abeille has performed ten experiments on dogs and sheep, for the purpose of ascertaining whether the blood can be coagulated in a healthy vessel by means of electricity. In all the experiments the artery submitted to the action of electricity became plugged by a firm coagulum in a few minutes.—*Med. Times*, August 18, 1849.

<p style="text-align:center">CURE OF ERECTILE TUMOURS.</p>

Dr Brainard, of Chicago, struck with the contractile power possessed by the etherial solution of gun-cotton, was induced to test its application to the surface of erectile tumours. The first case which he treated in this way was an erectile tumour, of the size of a strawberry, situated over the anterior fontanelle of a very young infant. Although the tumour was considerably elevated above the general surface of the scalp, it was at once reduced when the solution had dried, and, after a second application, at the end of six weeks, seemed to be cured.

The second was a child, six months old, with an erectile tumour, of 3-4ths of an inch by half an inch, situated below the lower eyelid. This tumour had not existed at birth, but had made its appearance shortly afterwards, and attained its maximum size in about six months. Dr Brainard applied the solution once a week, and, after two months' treatment, the tumour was hardly perceptible.—(*N. W. Med. and Surg. Journal*, Sept. 1849.)

[Nævus, every surgeon knows, often undergoes spontaneous cure ; and it may admit of question, whether Dr B.'s two patients recovered in consequence of the application of the astringent, or by the process of natural cure. The only form of erectile growth in which benefit is likely to accrue from the use of the collodion, is the nævus, formed by enlargement of the venous capillaries on the surface of the skin. It may possibly occasionally supersede the necessity for operation, or for those disagreeable expedients by which the removal of nævi is usually effected.]

MIDWIFERY, AND DISEASES PECULIAR TO WOMEN.

SPASM OF THE LIMBS DURING LABOUR ATTENDED WITH EXTREME PAIN.
BY DR MEIGS.

I think (says Professor Meigs) one of the most fearful sights of human agony that my eyes have ever witnessed, was that of a lady, in North Sixth Street, Mrs Th. S——y, who, being in labour of her first child, and making rapid progress towards a delivery, began suddenly to scream with the greatest violence, after uttering the words, "Oh, the cramp! the cramp! the cramp!" She was indescribably agitated, her countenance assumed the wildest expression, and all the persons in her chamber became much alarmed, on account of the very extreme degree of anguish, or rather agony, which was depicted in her countenance, and expressed by her shrieks. I had, for many years, been accustomed to the cries of puerperal women, to which I had become very indifferent, but this case deserved to be called terrible. The cramp affected the muscles of her right leg. I explained to her that the cramp was caused by the pressure of the child's head upon one of the right sacral nerves, and, though the appearance of the case was appalling, I exhorted her to bear down, hoping a few vigorous efforts would push the head lower than the point of pressure, and relieve her from the misery. I was disappointed; the cries ceased with the relaxation of the throe, only to return with every renewal of the contraction. So intense was her distress, that she began soon to show signs of exhaustion of nerve-force; and I have now no doubt that she was in imminent danger of death, from the excess of pain. The labour was arrested, as to its progress, with every renewal of the labour pains; and it appeared that her whole life-force and perception were occupied with this sole agony. I was three-fourths of a mile from home; and, while her husband was gone for my forceps, for which I immediately sent him, she renewed her cries about every four minutes. I think she would have died in half an hour. Upon receiving the instrument, I speedily applied it, and drew the head below the compressing point, and she bore the extraction without murmur; for the nerve was set at liberty, as soon as I had drawn the head below it. For more than a fortnight after the labour, there was a partial paralysis of the limb, following the pinch the nerve had suffered betwixt the fœtal head and the bony pelvis. It did not wholly disappear for many days. Two years later, I encountered a similar scene in the same apartment. She seemed to dread nothing in the approaching labour but the "cramp!" and engaged me to be prepared with my forceps, which I, unfortunately, declined to do. When the head descended into the pelvis, she was seized with precisely the same kind and degree of pain; the forceps were brought to me from the same distance, and she was again as speedily relieved. In this labour, as in the former, a partial paralysis and numbness of the leg followed the parturition, and did not disappear until the month was out.

In a third labour, during which I was confined to my house by sickness, she came under the care of my able colleague, Dr R. M. Huston, well known for his skill as an obstetrician. The same scene was renewed in this third case, and the doctor felt obliged to relieve her, by extracting the head with the forceps. I have attended her in a fourth labour, in the year 1846, in which the position of the child was such as to avoid the pressure; and she gave birth to her infant without cramp, or any uncommon pain.—*Obstetrics: the Science and the Art,* pp. 29, 30.

[In the above case, there is no actual evidence that the cramp and excessive pain arose from the pinching of a pelvic nerve, by the passing fœtal head. That such was the case, is merely a plausible conjecture. We know that, in many women, violent cramp of the limbs comes on, when the head is at a certain point of its transit through the pelvis, and that this occurs in different

and succeeding labours, where no such mechanical explanation can be given. We have seen most distressing cramp of the limbs supervene, during abortion and miscarriage, and also in labours at the full time, where no such mechanical cause as "pinching" could be supposed to exist. In fact, it can hardly happen, under any circumstances, that, in a well-formed pelvis, any of the large nervous trunks should come to be subjected to *irritating* pressure. Nature has provided against such an accident occurring, when the parts concerned are in their normal condition.

We shall not enter at length upon what we believe to be the true pathology of these muscular cramps. They are, undoubtedly, in the very great majority of cases, referable to sympathetic or to reflex-motory nervous influences, originating probably in the uterine nerves, and reflected through the spine to the muscles of the lower limbs most frequently, but occasionally to those of the upper extremities, and of other parts of the body.—J. M. D.]

STATISTICS OF PLURAL BIRTHS.

In England, in the year 1846, it has been found that of 528,690 married women, 523,313 gave birth to one living child, 5349 to twins, 27 to triplets, while one woman had 4 living children. Of 38,230 women who bore children out of wedlock, each of 37,934 bore a single living child, 293 had twins, 3 had triplets.

The proportions were—of married women who bore children, 1 in 588,690 had 4 children ; 1 in 19,581 had 3 children ; 1 in 99 had twins ;—of unmarried women, 1 in 12,743 women had 3 children, and 1 in 131 had twins.

[On calculating, from the data of 156,100 deliveries that have taken place in the Dublin Lying-in Hospital, from the year 1757 to the year 1847, we find that women having twins and more, were to those bearing only one child in the high proportion of 1 to 66 ;—and that women having three and four children, were to those having only one child, in the high proportion of about 1 to 5000. —*See the Abstract of the Registry of the Dublin Lying-in Hospital.*]

The two sexes in the children born in England, in twin births, were distributed as follows :—Both children were males in 1819 births ; one child was male and the other female in 2074 births ; both children were female in 1749 births.

The two sexes in the children born in triplet births, were distributed as follows :—In 10 cases, the 3 children were male ; in 10 cases, there were 2 males and one female ; in 7 cases there were two females and one male ; and in 3 cases the 3 children were females.

In the quadruple birth, the 4 children were all male.—*Ninth Annual Report of the Registrar-General,* 1849. Pp. 19, 92, 101.

ON SUPER-FŒTATION.—BY DR HARVEY.

In a paper, diligently compiled from ancient and modern authors, and consisting of a collection of cases of actual and false super-fœtation, Dr Harvey has adopted the following classification, as proposed by Velpeau :—

1. Cases in which a dead twin has been retained in the uterus. These we are justified in rejecting from the catalogue of cases of super-fœtation.

2. This class includes two sets of cases ; (*a*) those in which two children, of different degrees of development, have been born alive at the same time ; and (*b*) those in which one fœtus was retained for some days, weeks, or even months after the other, until it had arrived at maturity.

This second class includes those cases which have given rise to the greatest difference of opinion, among those who have treated of the subject of super-fœtation. Some, among whom is Haller, are disposed to consider them as instances in which a second, or even a third, conception took place during the presence of an embryo in the process of development in the uterus ; while others, rejecting this idea, have expressed their belief that they are merely twins, of which one has been retarded in its growth, and has remained in

the uterus until fully developed. And when we attempt to settle the question by analysing those cases which have been most fully reported, and which, consequently, seem to afford us some data for conclusions, we find it impossible to determine which of these opinions is right ; for, while some cases may be considered as affording proof of the occurrence of super-fœtation, others can with equal, or perhaps even greater propriety, be classed among twin pregnancies. The imperfect manner in which many of the cases are recorded, does not enable us to state, with any degree of certainty, under which of these heads they may be placed ; but there are sufficient data in some of them to warrant the conclusion, that super-fœtation is possible in certain circumstances.

The absence of the catamenial secretion (and, by implication, of the ovarian nisus), cannot be adduced as a proof against the possibility of super-fœtation taking place during the earlier period of utero-gestation. Two cases are related by Dr Harvey, to show that super-fœtation is possible, if menstruation occur during the early months of pregnancy. In both of these cases the size of the smaller child indicated that its conception dated nearly from the period of the cessation of the persistent catamenia.

3. Cases in which children of different colours have been born. Numerous instances of this description are recorded. They afford the most conclusive evidence on the subject.

4. Cases in which a double uterus has been found to exist.

5. Cases in which conception has taken place during extra-uterine gestation. —*London Journal of Medicine,* December 1849.

<center>DEATH BY CHOLERA IN UTERO.—BY DR DELARUE.</center>

This case was recently brought before the Academy of Medicine of Paris. It occurred in a woman attacked by cholera, who expected to be confined in ten or twelve days. As the patient no longer felt her child moving, and Dr Delarue could discover neither the cardiac sounds of the fœtus, nor the placental murmur, he at once induced labour, and the woman was soon confined of a dead child, of a deep black all over the body. The mother went on improving from the time of her delivery, and finally recovered.—*Lancet,* December 1, 1849.

[In Edinburgh, during the late epidemic of cholera, it was observed that pregnant women were strongly predisposed to attacks of cholera, which almost invariably proved fatal. In many cases of this kind, the uterus and its contents were very carefully examined, but in none of them was anything peculiar discovered.]

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<center>MEDICAL JURISPRUDENCE AND TOXICOLOGY.</center>

<center>ON THE PHARMACEUTICAL AND TOXICOLOGICAL APPLICATIONS OF CARBON.</center>
<center>BY M. ESPRIT.</center>

M. Esprit believes that the property possessed by carbon of appropriating saline matters held in solution, is not sufficiently known. Payen, twenty-five years since, announced that such is its separating power in respect to lime and the calcareous salts, that if 100 parts of distilled water, saturated with lime, be boiled with ten parts of charcoal, the filtered liquor will show no traces of the lime. Some years later, this was shown to apply, to a certain degree, to the alkalies. In 1829, Graham studied the action of carbon on nitrate of lead, arsenious acid, nitrate of silver, sulphate of copper, sulphate of ammoniated copper, the hydrate of lead dissolved in potass, solution of iodine, and the chlorides of soda and lime. He was unable to precipitate the arsenious acid, or sulphate of copper, but succeeded with all the others. Dupasquier showed that it energetically absorbs a large proportion of the alkaline sulphurets. These facts had made but little impression, when Chevalier announced, in 1845,

that the acetate and nitrate of lead, held in solution in water, wine, or vinegar, are removeable by carbon, with or without the aid of heat.   Garrod having thrown some doubts upon Graham's experiments, M. Esprit resolved to repeat and extend them, and now communicates the results at which he has arrived. He found that the following salts were energetically absorbed : the acetate and sulphate of copper, the acetate, sulphate, and chloride of zinc, oxide of zinc dissolved in potass, the acetate and nitrate of lead, acetate and nitrate of iron, tartar-emetic, nitrate and sulphate of silver, chloride of silver in ammonia, corrosive sublimate, nitrate of cobalt, sulphate of cadmium, and the chloride of barium.   He found that the sulphates of soda, potass, and magnesia, arsenious acid, and the nitrate of copper, were very sparingly separable. Five parts of the carbon of the blood, calcined with potass, and washed, produced such complete precipitation of the following salts, that no trace could be found in the filtered liquor, viz., sulphate of ammoniated copper, acetate and nitrate of lead, sulphate and nitrate of silver, chloride of silver in ammonia, chloride of zinc, and oxide of zinc in potass.   Twenty parts were required for the following, viz., sulphate and acetate of copper, corrosive sublimate, tartar-emetic, nitrate of cobalt, sulphate of zinc, sulphate of cadmium, and chloride of barium.

M. Esprit's experiments agree with those of Mandrel and Bussy, in denying the great absorbability of arsenious acid declared by Garrod to occur ; and so small is the proportion separated, that the utility of carbon as an antidote in poisoning from arsenic may be considered as *nil.*   The general conclusions are the following :—

1. Carbon, as regards prescribing, is incompatible with the substances which it appropriates and renders insoluble.   2. Its use in chemico-legal researches may give rise to great errors ; for, as Chevalier has remarked, authors frequently direct us to discharge, by means of carbon, the colour of liquids, in which we have afterwards to seek for the presence of metallic salts removeable by carbon. Thus, even in modern works, we are told to decolorise, by its use, liquids in which we have to declare whether a salt of lead, &c., is present !   3. In some cases, the property which carbon has of fixing certain bodies around its particles much facilitates their detection ; thus, for the separation of corrosive sublimate, and, as shown by M. Lebourdais, of vegetable alkalies, it suffices, after treating the liquids containing them with carbon, to remove them from this body by alcohol or ether.   4. If a better is not at hand, charcoal may be given as an *antidote* against all the poisons it thus has the power of fixing.   For this end it should be given, after vomiting, in large quantities of fine powder suspended in water.—*Bulletin de Thérapeutique,* tom. xxxvii. pp. 72-5, and *Med. Chir. Rev.,* October 1849.

[Our experiments, as regards arsenic, have been quite in accordance with those of M. Esprit, and in direct opposition to Dr Garrod's.   We never could observe that charcoal had the least power of removing arsenious acid from its solutions.]

DANGER ARISING FROM EXPOSURE TO THE SMOKE OF COAL.—BY MICHAEL W. TAYLOR, M.D., EDINBURGH.

On the morning of January 21, 1849, I was summoned to visit a family of five persons, who were taken ill under the following circumstances :—On the preceding night they had all retired to rest at nine o'clock ; at four A.M. the wife was awoke by her child (a girl of ten years of age), who was sleeping in the same room, being violently sick. On rising she felf herself affected with great headache and giddiness, so that she could not maintain the erect position.   The husband, on rising, experienced the same sensations, and had only time to advance into the next room, occupied by two young men, before he fell supine on the floor.   Both these young men, on awaking, felt the same headache and overpowering sensations ; one of them fell down insensible ; and the other, with an effort, got down stairs to summon aid.   This one felt better on reaching the open air.   Violent headache, giddiness, and ringing in

the ears, were present in all, which symptoms were much increased on raising the head from the pillow. In all the pulse was frequent and rather feeble, and the face pale ; all had great langour and prostration of strength, and in one the mind was much confused. Two were in a state of undefinable alarm and anxiety ; two complained of severe griping in the bowels ; another had vomited. In all, the tongues were very white and loaded. None of them appeared to have any suspicion of the cause of their illness. The windows and doors were thrown open. Two of the individuals were removed out of the house, and were quite well in the course of two hours. The three others could not be raised without producing faintness. In these the symptoms continued throughout the day ; and one of them had a violent diarrhœa for three hours. All felt quite better before bed-time.

In the case of these individuals are manifested very evidently all the incipient symptoms of the deleterious action of the vapour of burning fuel. The day before the accident, the kitchen fire-place had smoked very much. On retiring to rest, the family had left the fire burning in a low state. The two sleeping apartments were small, and the fire-places were closed by boards, so that, when the doors were shut, they were destitute of all means of ventilation. The flues from both led into the chimney from the kitchen fire-place below. The noxious vapour from the smoking coal being blown down the chimneys of the room in which the individuals were sleeping, was evidently the cause of the accident.

Several cases similar to the above have been recorded from time to time ; one, reported by Dr John Gairdner, is precisely parallel. A coal fire had been kept up during the night, and the smoke produced by it had passed down another chimney into the bed-room, the door of which was, however, open. The individuals, six in number, awoke with giddiness, a reluctance to rise, stupefaction of mind, and a desire to return to sleep. When they were thoroughly roused, headache and vomiting succeeded. They gradually recovered by the following day.[1]

It requires strong facts, and a succession of accidents, to warn the public against any unsuspected source of danger. It is to be hoped, however, that the late lamentable instance at St John's Wood, near London, will for ever prevent the recurrence of the almost suicidal action of sleeping in a close apartment, heated by a stove constructed on such false and destructive principles as the one used on that occasion.

The case above related ought equally to afford warning of the extreme danger of sleeping in apartments, which are known to be subject to smoke. The emanations from burning coal, particularly when it is smouldering, or in a low state of ignition, are quite as deadly as the fumes arising from charcoal, although perhaps less insidious in their action, on account of their being apparent or offensive to the senses. The air of the chamber which the individuals had respired in this case, contained, besides the carbonic acid and carbonic oxide, the products of combustion, a portion of sulphurous acid gas, which was notably evident to the senses.—*London Med. Gaz.*, June 1, 1849.

[These are obviously cases of poisoning by carbonic acid gas. The effect of smoke, as observed when forced by a back-draught into a room where there is no fire, is merely irritant to the lungs. It excites violent cough in bronchitic subjects, and once nearly proved fatal to a patient of ours labouring under pneumonia. The symptoms in the above cases were cerebral, and due to carbonic acid.]

POISONING BY OIL OF CEDAR (JUNIPERUS VIRGINIANA).—BY S. C. WAIT, M.D.

The rarity of poisoning by this substance, and the absence of any notice being taken of the same in Toxicological works, &c., has led Dr Wait to report the particulars of four cases which have within a few years come under his own

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[1] " Edinburgh Medico-Chirurgical Transactions," vol. iii., p. 543.

personal observation. The subjects were all females, and in three of the instances it was taken for the purpose of producing abortion. The symptoms manifested in all may be looked upon as somewhat characteristic. Convulsions of a "*tonic*" character affecting the whole body ; eyes very glaring and still; jaws set ; hands clenched ; breathing, struggling, choking and strangling ; countenance bloated and livid ; pulse from 45 to 60 per minute ; vomiting of a fluid having a strong odour of the oil. As soon as the convulsions ceased, the patients passed into a profound coma. Stertorous breathing, however, continued but for a short time, being soon followed by a peculiar kind of breathing, the chief character of which was "an unsuccessful heaving of the chest in inspiration, and a limpsy dropping together of the chest in expiration." The countenance assumed a bloated aspect ; pulse sank and soon became intermittent ; pupils dilated ; soft parts about the neck subsided at every inspiration, the whole indicating that venous congestions were taking place in the large venous trunks behind the heart, and that the balance between the circulation and respiration was lost.

Two of the four cases proved fatal. The quantity taken in each was from half an ounce to an ounce. The post-mortem appearances were—the odour of cedar oil given forth on opening the stomach ; the lining membrane of the stomach presented several small red patches, as large as the finger-nail, upon its upper and anterior surface ; for some distance around these patches the mucous membrane had lost its usual polished appearance ; the duodenum showed marked signs of inflammation. The uterus in each instance was in a healthy gravid state. The usual treatment in cases of poisoning from narcotic irritants was pursued. In one instance marked benefit followed free bleeding.—*From Boston Med. and Surg. Journal, in New York Journal of Medicine*, September 1849.

[Savin (*Juniperus Sabina*), and yew (*Taxus Baccata*), are generally believed to be the only poisonous species of coniferæ ; *J. Virginiana* may now be added to the test. The symptoms in the above cases are very similar to those produced by savin, but manifest more decidedly the narcotic character. The oil of cedar, like that of savin, seems to have no special action on the uterus, abortion, when it does occur, being only a secondary effect of the irritation of the other viscera. It rather appears from the above cases, as well as from what is known of the action of savin, that these drugs, even when they prove fatal to the mother, in a majority of cases fail to produce abortion.

J. Virginiana is in common use in America, as a substitute for savin as an issue ointment. Its red wood is well known as that used for making pencils.]

Part Fifth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XXIX.

MEETING I.—*November* 21, 1849.—JAMES SYME, Esq., in the Chair.

A case of Internal Hernia, remedied by operation, was communicated by the President, and will be found among the Original Communications, page 1.

Dr Simpson made some observations on the diagnosis and removal of intra-

uterine polypi. Dr S.'s observations will be found in an extended form among our Original Communications, page 3.

The *President* remarked, that it was curious to observe the amount of irritation and exhaustion produced by some of the smaller excrescences in the uterus. Analogous effects were often observed from slight affections of the rectum. He had, in company with the late Dr Mackintosh, examined a patient with a large tumour protruding from the vagina, and had removed it by transfixion and ligature; some time afterwards he met with another similar tumour in his practice in the Infirmary, and on the occurrence of menstruation from an orifice on its surface, all thoughts of interfering with it were abandoned.

Dr Simpson believed that an inverted uterus had, in some instances, been mistaken for a polypus, and actually removed. In suspicious cases, these lamentable mistakes might be prevented, by measuring the depth of the uterine cavity ; if this was much shortened, the probability was, that the uterus was inverted.

CASE OF INTESTINAL CONCRETIONS.

A communication from *Mr Sharp*, of Cullen, giving an account of a case of intestinal concretions, was read by Dr Taylor. The patient, a boy of six years of age, son of a crofter, residing at Stack of Portnockie, parish of Ruthven, Banffshire, was seized with pains in the bowels, on the 5th July, and passed a concretion of irregular shape, and measuring four and a-half inches in circumference. On the following day, his mother had given him a dose of castor oil, and in the afternoon some obstruction in the rectum was experienced, which Mr Sharp found to proceed from the impaction of other two concretions above the sphincter ani. One of these was with some difficulty broken up and extracted piece-meal. The other was drawn out entire by means of the curved handle of an iron table-spoon. It was an irregular mass, six inches in circumference, and two and a-half inches thick. A second dose of castor oil caused the expulsion of a third concretion, of a flattened form, six inches and a-half in circumference, and one inch in thickness. The concretions, when examined with a common lens, were found to consist of a substance like felt, *i. e.*, of fine fibres interlaced in every possible direction, firmly compressed, and in some places resembling silicious matter. The fibres doubtless consisted of *mill-dust*, the substance derived from the tissue between the cortex and kernal of the oat. The boy, like most in his sphere of life, lived almost entirely upon preparations of oatmeal. He had, for some time before passing the calculi, been in indifferent health, complaining of occasional pains in the side,—declining to take much food,—and, although not so ill as to require confinement to the house, was obviously weaker and less robust than other children of his age. His health had greatly improved since he had passed the concretions.

Three of the concretions were exhibited to the Society.

Dr Bennett made some remarks upon the origin of these calculi. Since Dr Wollaston and Mr Clift had ascertained that they were composed chiefly of the fibres from the husk of the oat, different observations had rendered it probable, that the interlacement and aggregation of the fibres was due to a true felting process. He alluded particularly to the cases of Dr Turner, of Keith, and to the paper formerly read before this Society by Dr Carmichael. It had been shown, that in the mill, when oats were being ground, the fibres sometimes formed themselves into felt-like masses, and that when oily matter was present, the felting process was effectually prevented. It would, he believed, be found, that the subjects of these concretions lived almost wholly upon oatmeal, and, in particular, that their ordinary food contained no animal matter, or at least no oily or fatty principle.

Mr Goodsir was inclined to think, that the formation of intestinal concretions was, in certain individuals, favoured by the form of the colon. When the gut was large, and furnished, like that of the horse, with complicated sacculi, *stasis* of its contents might occur, and concretions be formed round a

nucleus.   He mentioned that many of the concretions from the bowels of the lower animals, preserved in the University Anatomical Museum, had, for nuclei, bits of wood, nuts, and, in several cases, from the colon of the horse, a rusty nail.   The rusting or oxidation of the iron served to cement the fibres around the nucleus.

A conversation followed regarding the use of chloroform in surgery, and regarding the different modes of its administration practised here and in London.   Mr Syme believed, that when carefully used by inhalation from a handkerchief, as originally recommended by Dr Simpson, the remedy was perfectly safe and manageable, and that inhalers and such-like instruments, were only used where the practice was in its infancy.

Dr Simpson and the *President* related cases in which operations had been performed without the use of chloroform, and in which symptoms had followed, which, had chloroform been administered, many would have ascribed to its improper use.   Mr Syme likewise expressed his belief, that the want of success in the employment of chloroform, which some complained of, was due to the mal-administration of the drug.   Nothing could be more annoying to the surgeon than the struggles of an unruly patient, to whom an insufficient dose of chloroform had been given, before commencing an operation.   It no doubt required some nerve, on the part of those who used it for the first time, to persist with the inhalation when the patient was violently agitated and convulsed ; yet it was essential to do so, in order to secure the benefits of the remedy, and those convulsive or spasmodic appearances always subsided when the drug was continued.   Dr Simpson attached considerable importance to the purity of the drug.   When prepared with pyroxylic spirit, instead of alcohol, as was often the case with the specimens used in England, subsequent excitement of the circulation was apt to be produced by the inhalation.

MEETING II.—*December* 5, 1849.—JAMES SYME, Esq., in the Chair.

Dr Andrew read the following case of Injury of the Pelvis during pregnancy, which he had recently treated in the Royal Infirmary.

Martha Rannahan, æt. 30, the wife of a soldier, was admitted into the Royal Infirmary on Tuesday the 4th of September.   She states, that about ten years ago she had a child, and that soon after her husband was sent abroad, and did not return until about eight months since.   She now believes herself to be pregnant, and further states, that she quickened about a fortnight since.   She was perfectly well until the beginning of August, when she felt pain in the right groin, this was followed by pain in the corresponding thigh and leg, for which blisters were applied by the regimental surgeon with apparent benefit ; but on the morning of Wednesday the 28th August, she observed a hard swelling of the right labium.

On admission into the hospital, she has a sallow complexion, much resembling a person labouring under malignant disease, and is of rather a spare habit of body.   She does not complain of much pain ; the right labium is much swollen (about the size of a lemon), hard, and elastic, the hardness extends up towards the groin.   The external aspect of the thigh is œdematous, and the œdema passes up on the posterior part of the limb.   The skin is so firmly attached over the hard and elastic œdematous tissue, that it cannot be pinched up.   A large tumour can be distinctly felt on the left side of the abdomen, about the size of the uterus at the sixth month; but the abdomen itself is more flat in front than is usual at this period of utero gestation.   A very loud sound, similar to the placental bruit, is heard all over this tumour ; but the sounds of a fœtal heart can *nowhere* be distinguished, although carefully listened for.

On examination per vaginam, the os uteri can nowhere be felt ; a mass resembling in size and shape the fundus of the uterus, is felt in the left side ; but whether this is the uterus displaced, or a tumour, cannot be determined.

The catamenia have not appeared for four months. The quantity of urine secreted is small and loaded with lithates. Micturition is attended with much difficulty, on account of the swollen state of the labium. The tongue is rather dry, but moist at the edges ; the appetite has been bad since she took ill ; the bowels are costive ; she suffers much at present from hæmorrhoids; perspiration is copious.

11th September.—Sometimes an impression as from a living fœtus is communicated to the hand when placed on the abdomen, and also when the hand is pressed firmly and suddenly against the tumour on the left side of the abdomen, it is felt to impinge through fluid upon a hard body. There is considerable tenderness above the crest of the ilium on the right side, and a tumour is now perceived in that region. The abdomen is much larger since her admission, and she suffers much from sickness and vomiting.

5th October.—The general health continues much the same as before. Her countenance has assumed a dingy yellow hue, and her features are more pinched in appearance. The tumour on the left side extends from the crest of the ilium to the left hypochondrium, and has a distinct rounded margin. The tumour on right side has also increased somewhat. There is much flatulent distension of the abdomen, which is very tympanitic. On applying one hand above the crest of the left ilium, and the other (cold) over the summit of the tumour, a distinct movement is felt strongly resembling that of a fœtus in utero ; but on auscultating no fœtal heart can be heard, although it has struck my clerk (Dr Reid) that on more than one occasion, after the movement in the tumour, he has heard a ticking sound, which might be that of a fœtal heart. The mammary areola is very dark and large, the nipple is puffy, and the glandular follicles are enlarged.

14th October.—Has been getting worse ; flatulence continues undiminished; has much sickness, and an almost constant eructation of a watery fluid. As she had passed no urine since the morning of the 12th, the catheter was introduced last night, and about twelve ounces of urine drawn off.

16th October.—Feels easier to-day, and the abdomen is less tense, but she is evidently much lower. The catheter was again introduced yesterday morning, but only about five ounces of urine were drawn off. The nurse states, that during the night the patient passed so much water that it soaked the bed.

Vespere.—Feels easy, but her mind wanders a little, and she is evidently sinking. She died at two A.M. of the 17th. During the time that this patient was in hospital she was seen by several medical practitioners in town, as well as by Dr Robertson and myself, and for some time after her admission great doubts were entertained as to her pregnancy, it being believed, from her general aspect, that the tumour was a large mass of malignant disease ; and this opinion was strengthened by our inability, on examination " per vaginam," to discover any. " os uteri, " by the situation of the tumour, and by the absence of anything like the sound of a fœtal heart. Subsequently however, upon the motions in the tumour on the left side becoming more distinct, and so similar to the movements produced by a live fœtus " in utero," some of the gentlemen who saw her (myself among the number) felt satisfied that she not only was pregnant, but that she had quickened, and that the uterus must have become displaced, and pushed over to the left side, probably by the tumour, which was perceived upon the right side, and which, it was considered, might prove to be malignant, or perhaps a large ovarian cyst or mass of cysts. About a week before her death, on a vaginal examination being made, fluctuation could be felt in the tumour on the right side, just below the pubes ; and it was suggested, that some relief might be afforded to the patient by drawing off the fluid by means of a trochar and canula introduced below the pubes through the parietes of the vagina. But the suggestion was abandoned, in consequence of the weak and exhausted state of the patient, and also from

the uncertainty of the result of perforating a tumour, the nature and contents of which weie enveloped in so much obscurity.

Sectio Cadaveris—External Appearance.—Body emaciated, but well formed. The integuments generally were tinged of a yellowish hue. The abdomen was much distended, considerably more so than at the full time of utero-gestation, contrasting remarkably with the general emaciation. Above, the swelling was soft and tympanitic; below, it was of firmer consistence and dull on percussion, more especially on the left side, where a distinctly circumscribed tumour could be felt, of greater induration, and about the size of an ordinary cocoa nut. On the right side, the swelling was prolonged for about two inches into the femoral region. The integuments of the abdomen presented the usual wrinkled aspect of matrons. The mammæ were undeveloped; a well-marked areola existed around each nipple. The right labium was much enlarged, and pitted on pressure. The whole right extremity was larger than its fellow, and from the knee downwards was œdematous.

Head not examined. *Thoracic Organs* healthy.

Abdomen.—On opening it, the *stomach* and the greater part of the *intestines*, which were distended with flatus, were found pushed upwards, so as greatly to encroach upon the thoracic cavity, by the enlarged *uterus* which occupied the left iliac and lumbar regions, and by an irregular lobulated mass which arose from the pelvic cavity. On examination per vaginam, a loop of umbilical cord was found occupying the upper part of the *vagina.* The os could not be felt. The pelvic contents were now removed *en masse.* In doing so, the tumour gave way in several places, giving exit to coagula, and to a considerable quantity of a dark, reddish-brown, grumous fluid. It was found to extend up as high as the lower margin of the kidney; and in front it was adherent to the abdominal parietes for about three inches above the pubes, especially on the left side. It occupied the entire cavity of the pelvis, dislodging the *bladder* upwards and forwards. For the most part it was situated beneath the peritoneum; but on the left side, and behind the uterus, its covering seemed to consist only of cellular tissue. On section, it presented large masses of dark coagula enclosed in imperfect cysts (the walls of which in several places had a white fibrous appearance), together with dark grumous fluid. In all directions it broke down easily under the finger.

The *uterus* was displaced laterally, its anterior surface looking towards the left iliac fossa. In front and behind it was free, but, laterally, it was partly adherent to the morbid mass. It contained a male fœtus of about the sixth month, of which the cuticle was commencing to separate. The presentation was footling. The *placenta* was situated on the posterior wall, and admitted of easy separation. The *ovaries* and Fallopian tubes were intact. The *right ovary*, on section, presented a corpus luteum, with a stellar cicatrix in its interior: a minute depression marked its presence externally. A small serous cyst was found attached to the Fallopian tube of the same side.

The entire surface from which the tumour had been removed was covered with debris, which admitted of easy removal with the finger. The peritoneum covering the right iliac fossa separated with ease, the bone below presenting a rough and worm-eaten appearance. The surfaces of the sacrum and ilium forming the right sacro-iliac synchondrosis were found separated to a considerable extent, at one point admitting the distal phalanx of the index finger. At the upper part of the articulation, ligamentous bands still kept the bones in contact, but below, not a vestige of them was to be seen. The bones, however, admitted but of slight motion upon one another. The iliac artery and vein having been removed along with the tumour, it could not be made out satisfactorily whether a rupture of these vessels had taken place or not. The prolongation of the tumour into the groin was situated above the femoral vessels. It consisted of loose coagula. The femoral artery and vein were perfectly pervious, and appeared normal.

Under the microscope the fluid exhibited blood-globules and fibro-plastic

cells, while the coagula and the walls of the so-called cysts, presented delicate fibres in every stage of development.

The circumstance of the umbilical cord being found in the vagina at the "post-mortem" examination indicates that the membranes had ruptured, and this probably occurred during the night of the 15th, as the nurse reported at the visit hour on the 16th, that during the night the patient's bed had become wet, which is sufficiently accounted for by the escape of the liquor amnii. During the "post-mortem" examination the husband of the deceased was present, and when the diastasis was discovered, he was asked if he was aware whether his late wife had met with any accident or violence previous to her admission into hospital? In reply, he stated, that about the 20th of July last, as his wife was entering one of the barrack rooms with her arms full of clothes, the door was accidentally slammed to with great violence, and struck her upon the right hip. The blow was so violent, that the woman was knocked down, and remained for a considerable time in a state of insensibility. It would have been interesting could we have traced out the source of the hemorrhage; but this was impracticable, owing to the destruction of the adjacent parts by the removal of such a mass of foreign matter. The history of the case, however, seems to indicate, that the tumour was formed by hemorrhage from small vessels, as had it proceeded from the rupture of a large arterial or venous trunk, it is not unreasonable to suppose that the hemorrhage would have proved fatal by syncope at an early period; whereas the tumour increased but slowly, and the patient sank exhausted after many weeks of suffering.

Dr Simpson, who had seen the patient in the Infirmary, had had some difficulty in forming a diagnosis. There was certainly evidence of tumour, but the question to be solved was its precise nature. He had observed that the cutaneous veins on the right side of the abdomen were enlarged, to an extent unusual in cases of ovarian disease. He had believed the disease to be a malignant tumour beneath the peritoneum, and most gentlemen who saw the patient had formed a similar opinion.

ANEURISM OF THE SUPERIOR MESENTERIC ARTERY OPENING INTO THE DUODENUM, TWENTY-TWO MONTHS BEFORE DEATH.

Dr W. T. Gairdner read the following communication on a case of aneurism of the superior mesenteric artery.

M. C., æt. 26, servant, was admitted into the Royal Infirmary, under Dr Douglas, January 4, 1848. During the twenty-four hours previous to her admission, she had brought up, by vomiting, large quantities of blood, on six different occasions. The vomited matter consisted of clotted blood, with a good deal of fluid, and might have amounted in all, according to her statement, to half a gallon. The vomiting had ceased on admission.

She dated her complaints from the summer of 1847, when she had jaundice, accompanied by some sickness and vomiting, and by pain across the chest and back. She was not confined to bed; but became afterwards sensible of diminished strength. About six weeks before admission, she had suffered from the prevailing influenza, during the progress of which she frequently had vomiting of a sour acrid fluid, sometimes to the extent of half a gallon at a time. The vomiting occurred usually in the evening, after dinner; never after breakfast. She also suffered from constant pains, extending from the back to the pit of the stomach, and from a feeling of tightness in the chest, especially when she had on stays, or heavy clothing. She had little or no cough at any period of the complaint.

She was admitted in a state bordering on syncope; the surface was very pale; the circulation hurried. The slightest exertion seemed to cause fainting, accompanied by the peculiar pain in the abdomen from which she had been suffering. When seen next day, she had vomited about half a pint of blood since admission; the blood was coagulated. She fainted at the time of the vomiting. She was free from sickness; but there was tenderness in the hepatic

region, with slight extension of the dull percussion. The breath fœtid ; the tongue with a slight grey fur ; circulation hurried. (Digitalis and ipecacuan.) She continued in the same state for twenty-four hours more, unable to rise without a feeling of vertigo. The pulse, on the 6th, was 108, soft and quick. From this time to the evening of the 7th she improved steadily. On the evening of the 7th (third day from admission), she had repeated vomitings of blood, preceded by headache and sickness. The quantity vomited was not exactly known. She was more anemic than before, and the epigastric ten-derness was more considerable, but chiefly on the right side. A *slight pulsation of the abdominal aorta* is noted in the report, and an impairment of percussion on the right side of the epigastrium. From this period (four days after admis-sion) she had no return of any bad symptom ; and, by rest and careful regimen, she became rapidly convalescent. She remained in the house till February 7th (one month), when she was dismissed cured. After this, I saw her several times in the surgical house. She had been admitted on account of a weak ul-cer on the back of the left leg, which usually bled at the menstrual period, and was slow to heal. She was still pallid and languid, and suffered from dyspeptic symptoms, with amenorrhœa, but had no return of vomiting. She was sent out with her ulcer nearly healed. I heard nothing more of her till I learned that she had fallen down suddenly, in the street, and had been found by the officers of police in a fainting state. She died before she could be re-moved to the hospital, whither the body was immediately brought. This was on November 28, 1849 (twenty-two months from first occurrence of hæma-temesis).[1]

The dissection was performed next day (November 29th).

The body was pale, but not at all emaciated

On making the first incisions through the parietes, the cause of death was at once revealed in a large quantity of clotted blood, which was found in the peritoneal cavity. The coagulum, on being removed, weighed 2½lbs. ; so that I think considerably above 3 lbs. of blood must have been extravasated.

The thoracic organs were healthy; but the left side of the heart was small and firmly contracted; and the thoracic aorta was also small.

The great abdominal glands were all healthy, but very anemic. The liver and spleen were bound up to the diaphragm by rather loose but dense ad-hesions ; thus fully accounting for the tenderness during life in the left hypo-chondrium. In the angle between the lower part of the duodenum and the head of the pancreas, there was found a ragged lacerated opening through the serous membrane. The edges of this opening were not all thickened. The pancreas was normal in size and structure, but appeared to be displaced for-wards and somewhat stretched over a small tumour, situate behind it, on the front of the vertebræ and great vessels. To ascertain the nature of this tu-mour, the biliary ducts (which passed very close to it at its right side, but had apparently no connection with it) were cut across, close to the liver. The aorta and vena cava were then divided below the diaphragm, and a considerable por-tion of these vessels, with the stomach, duodenum, and pancreas, were removed *en masse*.

Being strongly prepossessed with the idea that there had been some ulcera-tion of the stomach, giving rise to the profuse vomitings both of blood and alimentary matters to which she had been subject, I slit open this organ, and examined every part of the mucous membrane with great care, but without discovering anything abnormal. I then continued the incision into the duo-denum, and carefully looked at the mucous membrane, at first with a similarly negative result. The coats of the intestine, however, were at one point very

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1 Since the above was written, I have learned that she was, for a few days, in an-other ward in the house, in October last, affected with deep jaundice; and also that she had led an irregular life, having, at a previous period, suffered under syphilitic ulceration of the ear.

thin, and slightly ecchymosed ; this part was found to be in the immediate neighbourhood of the before mentioned opening through the peritoneum, which had given rise to the fatal bleeding. On more minutely inspecting the mucous membrane, I found a very small ecchymosed spot, slightly elevated, and perforated in the centre by a minute opening, from which a very little bloody fluid could be squeezed by gentle pressure. A moderately fine probe could be passed a line or two into this opening, but was there arrested ; and no attempt was made with a finer instrument. This cicatrix was situate about two inches lower in the gut than the opening of the biliary vessels, and very close to the site of the external peritoneal opening.

On slitting up the aorta from behind, it was found to be, like the part of the vessel examined in the thorax, nearly, if not absolutely, free from disease or deposit. The opening of the superior mesenteric artery, however, was a little irregular in form; and, on passing a probe through it, a considerable dilatation was discovered in the line of the vessel, occupying the whole first portion of its trunk, and corresponding in situation with the tumour above described. A little further manipulation enabled me to push the probe downwards, through the ragged opening in the peritoneum.

The sac was now divided by an incision to the left of the mesial line, passing through the peritoneal opening. It was seen to be composed of a thick and strong fibrous cyst, slightly oval in form, and not larger than a hen's egg, somewhat flattened antero-posteriorly, and with its long diameter in the axis of the artery. This cyst had evidently ruptured at its lowest point, and the blood had made its way through the cellular tissue between the coats of the duodenum, breaking up the muscular coat into two layers, and finally perforating the serous coat by a ragged opening. The sac contained a number of irregular and half-decolorised coagula.

The condition of the coats of the mesenteric artery itself, at the point of origin of the aneurism, was not investigated, the parts being sent to the University for further dissection and for preservation. The continuation of the artery was also not examined. The cœliac axis was healthy, but perhaps rather larger than usual ; the other branches of the abdominal aorta appeared all normal. The splenic vein, which lay close upon the side of the tumour, but, as far as could be observed, without any communication with it, was somewhat dilated, and contained a very firm coagulum of decolorised fibrine.

It was now evident that the disease was an aneurism of the superior mesenteric artery, which had opened primarily into the duodenum, giving rise to very copious vomitings of blood, twenty-two months before death ; that this opening had become entirely or nearly closed, and that death finally took place from a second opening, not far from the first, into the peritoneal cavity.

In this view of the case, the whole of the collateral symptoms become of easy explanation. The occasional jaundice was evidently owing to the pressure exerted by the tumour, when at its extreme point of distension, on the biliary duct ; while the sickness and vomiting of sour matter, after a full meal, so evidently relieved after each hemorrhage, may have been owing to a similar pressure on the duct of the pancreas interfering with the duodenal digestion. The nearly constant pain produced by exertion, and the feeling of tightness and oppression caused by the use of stays, or any other article of dress which compressed the abdominal organs, may be obviously explained by the injurious pressure effected in this way on the tumour, and on the great blood-vessels which lay beneath it. The tenderness of the epigastrium and right hypochondrium were probably not directly connected with the deep-seated lesion, and rather seem to have resulted from the inflammation in the serous lining of the liver, which produced the adhesions found after death. The slightly increased size of the liver, as shown by the extended dull percussion in the hypochondrium, probably was caused by the obstruction of the vessels and ducts of the organ. The lassitude, diminished strength, anemia, and amenorrhœa, were evidently owing to the great and repeated loss of blood ; and obstinate continuance of

the anemic state during the long interval between the attacks of hemorrhage, may have been caused by the imperfection of the digestive process. The existence of pulsation in the epigastrium needs no explanation.

At the same time it is to be observed, that the whole of the phenomena under observation at the time of the first attacks of hæmatemesis, were such as to lead directly to the supposition of a chronic ulcer of the stomach. The comparative frequency of this disease in young females, the whole progress of the case, and, finally, the apparent cure, by simple remedies and careful regimen, were calculated to confirm this diagnosis ; and even on now reviewing the recorded facts of the case, I do not think that any of the prominent symptoms can be considered as opposed in any way to this opinion. The following symptoms, at least, appear sufficiently equivocal in character :—

1st. The hæmatemesis. Profuse hemorrhage, as a consequence of chronic ulcer of the stomach, involving the coronary artery as one of its branches, has been repeatedly observed, as in the cases of Dr Craigie[1] and others.

2d. Sickness and vomiting after eating, with dyspeptic symptoms of various kinds, are nearly constant phenomena in chronic gastric ulceration.

3d. Dull pain, increased by exertion or repletion, with tightness and oppression at the epigastrium, are equally characteristic symptoms of the disease in question.

4th. Anæmia was the obvious consequence of the loss of blood ; the tendency to syncope, the lassitude, and the diminished strength, were equally so.

5th. Lastly, in the category of the equivocal symptoms, I must also place the slight epigastric pulsation which existed in this case, unaccompanied by any appreciable tumour, from which its true nature might have been inferred. The extremely frequent occurrence of such a pulsation, in connection with dyspepsia, would of itself have been, in the present instance, a sufficient reason for the absence of any suspicion; but the probabilities in favour of its being what is so well known as " nervous pulsation" of the aorta, were greatly increased, when it is considered that the whole arterial system presented the vibratile pulsation, which so often follows profuse hemorrhage.

There remains, then, of the actually observed symptoms, only the jaundice. Now jaundice is, to say the least, far from being a characteristic symptom of aneurism of the abdominal vessels, while, in the present instance, the tenderness in the hepatic region and extension of the dull percussion, seemed to point to an accidental affection of the liver itself as its source.

But is there any symptom, or collection of symptoms, which, in another case similar to the present, might lead to the establishment of an unequivocal diagnosis ? On reviewing the whole case, it appears to me that the following points merit consideration :—

1st. The stethoscope might have revealed a bruit, single or double. If the sound had been double, the nature of the case would have been no longer doubtful; but if a single sound only had been heard, as is commonly the case, it would have been open to question, whether it was produced by an aneurism, or by some other deep-seated tumour pressing on the aorta. Nay, in the pulsation which is independent of organic disease, I have occasionally heard a distinct bruit, on applying moderate pressure with the stethoscope over the vessel.

But, farther, there might have been no aneurismal bruit. This peculiar phenomenon depends, in great part, upon the dilatation of the aneurismal sac at each impulse of the heart ; and there is reason to think that an aneurism, so closely bound down as the present, would be accompanied by but little murmur. In fact, in a case related by Dr Hope, where an aneurism, considerably larger than this one, sprang from the right side of the aorta, half-an-inch below the cœliac artery, there was no aneurismal bruit, only a superficial whiff, which proceeded from the superior mesenteric artery, stretched over the front

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[1] Edinburgh Medical and Surgical Journal, vol. iv., p. 262.

of the tumour. This is the only case I can find bearing on the question.. In the present instance, I do not remember that a stethoscopic examination was made; but if so, the results must have been negative.

2d. The pain and vomiting, after taking food, might have presented a peculiar character, had inquiry been made. If these symptoms proceeded, as is most probable, from impediment to the duodenal digestion, they would occur an hour or two after food had been taken; whereas, in the case of ulceration of the stomach itself, the pain would rapidly follow the meal.

3d. The jaundice, if its intermission and recurrence had been the subject of frequent and continued observation, might probably have been attributed to pressure or obstruction of the ducts, rather than to a disorder of the liver itself; and this circumstance would probably have led to a closer examination of other symptoms and signs.

The most practical conclusions to be drawn from this remarkable, and so far as I know, unique case, appear to be the following : That the combination of jaundice, with symptoms indicating imperfect pancreatic digestion (cardialgia, pain and vomiting some time after taking food), should, in all cases, lead to the strong suspicion of a tumour pressing on the ducts of the liver and pancreas, near their duodenal termination ;—that the co-existence of these symptoms with fixed pain or oppression in the epigastrium, pulsation in the same region, and hæmatemesis, would very probably indicate aneurismal tumour, even in the absence of more unequivocal signs ; and that this diagnosis would not be invalidated by the arrest of the hæmatemesis (even after repeated recurrence), or by the apparent cure of the affection ; while, on the other hand, it would be rather confirmed if the remission of the pain and other rational symptoms immediately after each bleeding, were as marked as in the present instance.

I think, however, it may also be said, with truth, that none of these symptoms or phenomena, would suffice absolutely to point out the true state of the case, unless unequivocal signs of an aneurism were presented on stethoscopic examination.

Appendix.

Aneurism of the superior mesenteric artery is exceedingly rare in man. Since the above case was read to the Society, however, my attention has been called to four cases of it.

In the " Lancet " for 1835 an instance of this affection is described, in a patient who died of scarlatina, under Dr Elliotson. It was as large as a human heart, and had formed during life a pulsating tumour above the umbilicus. It was attended by severe pain in the lumbar, epigastric, and umbilical regions, and also with occasional nausea and vomiting after taking food. The sac remained entire up to the period of death.

Two interesting cases of superior mesenteric aneurism are related by Dr J. A. Wilson, in the " Medico-Chirurgical Transactions," vol. xxiv., p. 221 ; and it is very remarkable that one of these cases ended by jaundice, while the other was accompanied by vomiting of large quantities of blood. The blood, however, in this latter case, does not appear to have come from the aneurism, but from the lung, the patient being affected with profuse hæmoptysis, from phthisis. No symptom of digestive derangement is recorded in this case, except obstinate constipation. The aneurism was large, easily felt in the epigastrium, and attended with pain.

In the other case the jaundice was very marked while the patient was under observation. There was also pain between the shoulders, and in the line of the dorsal vertebræ, as well as occasionally in the epigastrium and hypochondrium ; exhaustion, loss of muscular power, depression of mind, and loss of appetite, but no tumour or pulsation, although frequent examination was made. Neither vomiting nor sickness are mentioned. The aneurism was also large, and in the trunk of the artery, about an inch from its origin ; it was closely in contact with the *ductus communis*, which, however, was pervious.

In the " Medical Gazette" for 1842 (Feb. 25), Mr James Douglas relates a

case of thoracic aneurism, complicated with small aneurisms of the cœliac and mesenteric arteries. These latter presented no symptom during life, except vomiting, which occurred when exertion was made after taking food.

Aneurisms of the cœliac axis and its branches are somewhat more common than those of the superior mesenteric. In one case alluded to by Mr South (Translation of Otto's Pathological Anatomy, vol. i. p. 320), in the Museum of St Thomas's Hospital, the aneurism " by its motions against the stomach, produced vomiting whenever food was taken, and the patient died of consequent starvation." The museum of the College of Surgeons of Edinburgh contains a preparation (Catalogue, No. 1152) of aneurism of the hepatic artery, in which the superior mesenteric is also considerably thickened and dilated ; but no particulars of the case are given. In the same museum (No. 1146) is an aneurism of the abdominal aorta involving the cœliac axis ; the superior mesenteric artery issues from the lower border of the sac, but is very slightly involved in the disease. In this case the sac burst into the cellular tissue, and the extravasated blood became encysted, forming a secondary sac, the rupture of which caused death. The existence of the aneurism was not suspected during life, and the patient was treated for hepatitis. We may, therefore, presume, that jaundice was probably present in this case.

The case of aneurism of the hepatic artery, by Dr Stokes, adverted to by Mr Goodsir (p. 89), is in the Dublin Journal, vol. v., p. 401. The tumour was bound down by the capsule of Glisson, and therefore in close connection with the ducts, which were singularly dilated throughout the liver, forming projections on its peritoneal surface. In this remarkable case, the first symptom was copious hæmatemesis ; and, from this fact, together with the singular dilatation of the biliary ducts, I cannot help suspecting, that the aneurism had opened into them,—a circumstance which might easily have been overlooked. In a letter to Dr Stokes, cited in this paper, Dr Harrison incidentally notices having seen an aneurism of the mesenteric artery. He also observes, that haematemesis frequently accompanies abdominal aneurism ; and that in one case, where examination after death took place, the aneurismal sac had no communication with the stomach.

The museum of the College of Surgeons of Ireland contains two instances of aneurism of the abdominal aorta bursting into the duodenum (Dr Houston's Catalogue, B. c. 268, 269). The history of the cases is not given, nor are the anatomical relations of the aneurisms stated.

In the museum of St Bartholomew's Hospital (thirteenth series, 68), there is an aneurism of the abdominal aorta, extending from the superior mesenteric artery to the bifurcation, which ruptured into the duodenum *four days before the death of the patient.* I am indebted to Mr Paget for some particulars of this interesting case, copied from the books of the hospital. The man had been sensible for two years of a pulsation just below the scrobiculus cordis, which he perceived for the first time after a fall from a scaffold. In the two days before death, he had repeated discharges of blood *per anum*, preceded by severe pain, which was relieved by the discharge. The opening into the duodenum was found, after death, to be regular and smooth-edged.

In this, and most of the other cases of abdominal tumour I have referred to, the coats of the vessels were diseased. In the case I have narrated, however, the nearly healthy state of the aorta seems to render it probable that the aneurism was the result in some way or other of violence applied to the artery. The sac was very strong and dense, but its relation to the coats of the vessel could not be distinctly made out without destroying the preparation.

The *President* considered Dr Gairdner's communication highly interesting, as confirmatory of the observations which have now been frequently made, that the bursting of an aneurism of a large vessel was not always fatal. The hemorrhage might cease when the aperture became plugged up, and the patient, restored to apparent health, might, after the lapse of months, die of some disease unconnected with his original complaint. In illustration, he read a

very interesting communication from Mr Ramsay, surgeon at Broughty Ferry :—

"On the subject of the rupture, and subsequent temporary cure of aneurism, allow me to add a very interesting case which occurred in Cupar Fife, in the summer of 1834, in the person of Alexander Grant, æt. 50 to 55, short and muscular, of rather intemperate habits, a porter to an iron merchant. I saw him frequently during the summer above mentioned ; the tumour was situated on the upper and left side of the chest. During my visit to Cupar, in the Christmas recess, I called for Grant and found him confined to bed, very weak from the loss of a large quantity of blood, that had taken place a few days previously, and from a rupture opposite the cartilage of the third rib, whence a stream of blood, somewhat larger than a quill, immediately issued. Grant, nothing alarmed, got hold of a bowl, held it at arm's-length to receive the *red arch* which he supposed was the contents of a " bloody boil," pressing the tumour with his chin to effect a more speedy clearance ; after about a quart of blood had gushed out, Grant fainted, and the bleeding stopped and dried over the opening ; the vascular action being so much reduced by this extraordinary depletion, allowed the integuments in some measure to collapse and cicatrise under the dried film of blood. As I expected to be absent from Cupar during the remainder of the winter session, and greater part of summer, I requested my master, Mr Adam Wisemann, to remove the parts and preserve them. In November 1835, I was informed that Grant had lived four months without any new rupture ; he did not die from the aneurism, but from typhus fever. I had the satisfaction of examining the parts, which had been carefully dissected. The aneurism involved the arch and innominata ; absorption of the second, third, and fourth ribs, parts of the clavicle and sternum ; the cicatrix well defined. I believe the preparation is still in Edinburgh."

Dr Gairdner had, many years before, presented to the Society a case of aneurism which had burst into the left bronchus, and had recorded it in the forty-third volume of the " Edinburgh Medical and Surgical Journal." After expectorating a considerable quantity of blood, the patient continued in tolerable health for ten days, when he suddenly expired in the act of dictating to a clerk, a profuse discharge of blood having taken place from the mouth. On dissection, two communications were traced between an aortic aneurism and the left bronchus ; the upper one was plugged up by coagulum, the lower one had been more recently formed, and given vent to the fatal hemorrhage.

Dr Bennett remarked, that when an aneurism opened upon a mucous surface, the aperture was usually small ; it was not unusual to find several small perforations which might easily become obstructed for a time by coagula, as in the cases just related to the Society. When, however, aneurism opened into a serous sac, the aperture was for the most part so large as to cause sudden death, by extensive hemorrhage.

Dr Douglas explained the grounds upon which he had treated the patient, twenty-two months before her death, when she first vomited blood, rather as the subject of chronic ulcer of the stomach than of aneurism. The patient was but twenty-six years of age, a period of life at which the chronic ulcer is often met with in females, and at which aneurism is comparatively rare. Hæmatemesis is likewise not uncommon at this age, and the abdominal pulsation is not a trust-worthy sign of aneurism in such patients. Possibly a more correct diagnosis might have been arrived at, had he considered that the patient's general health was not so much disturbed as is usual in cases of chronic ulcer of the stomach. In particular, the digestion was not seriously depraved, nor was there complaint of constipation. Even had the existence of aneurism at this early period been suspected, it would, in all probability, have eluded detection on physical examination.

Mr Goodsir called Dr Gairdner's attention to a case recorded by Dr Stokes, of Dublin, in which an aneurism of the hepatic artery caused jaun-

dice, by compressing the hepatic ducts. He also alluded to some curious cases of the same description, referred to by Otto, in his Pathological Anatomy, by Dr Donald Munro, in the " Medical Essays," and by Sir John Pringle. In some of the lower animals, aneurism of the superior mesenteric artery was not unfrequent. Thus, it had been often observed in the horse, and still more frequently in the ass. Rudolphi had pointed out that entozoa (*Srongylus Armatus*) were often met with in great numbers in the aneurisms of the superior mesenteric of the horse and ass. These worms lay within the aneurismal sac, their tails being entangled in the fibrous clots, while their heads were free and exposed to the current of blood. But they were found in other situations within the abdomen ; thus Morgagni had described them as occurring in tubercular masses outside the vessels. About three hundred years ago, Tyson, an old English anatomist, on dissecting a peccari, found the abdominal aorta to be uniformly dilated ; and Daubenton having long afterwards made a similar observation, the aneurismal condition of the aorta was for a time believed to be the normal structure of the peccari. Cuvier had pointed out the fallacy of this idea, by showing, that, in the young animal, the aorta was not dilated. Rudolphi had ingeniously speculated upon the possible connection between the aneurisms affecting the human subject, and the existence of entozoa in the blood ; some old writers had gone a step farther, and believed that the erosion of the aneurismal sac was effected by the ravages of an animal parasite. The strongyli had been found in different parts of the circulating system, and their presence was not necessarily associated with the existence of aneurism. In answer to a question from the President, Mr Goodsir stated, that a species of strongylus had been observed in the heart of the porpoise, and in the bronchial tubes of the same animal. He repeated that the " habitat" of these worms was not always within the arteries.

Professor Dick, of the Veterinary College, had, in the course of his dissections of the lower animals, been long familar with aneurisms of the mesenteric artery, and with the presence of worms in their interior. The worms were found both in the horse and the ass, more frequently, however, in the latter animal. They were found of all sizes, and in the most different textures. Thus he had seen them on the mucous surfaces, enclosed in a small nucleus or cyst, in the arteries, in the brain, even in the spermatic cord. He exhibited to the Society specimens of the strongyli. Aneurisms were not very often met with in the horse ; he, however, produced examples of the disease, both from the aorta and from the internal carotid. In the latter instance, the animal had died from hemorrhage consequent upon rupture of the sac into the nostril. So common, however, were the dilatations of the mesenteric artery in the ass, that Mr Dick had ceased to look for them, having satisfied himself that they existed in almost every ass that was examined. Their presence gave no inconvenience, and did not cause the death of the animal ; neither could they be detected during life. Mr Dick showed a specimen of mesenteric aneurism taken that day from the body of an ass in his dissecting room, and other examples of the worms alluded to, which had been obtained from the bronchia of the calf.

Dr Simpson made some observations upon the frequency of hæmatemesis in young women from obstructed catamenia, and totally unconnected with serious organic disease.

Dr Bennett mentioned that on opening the body of a young female, who died under Dr Craigie's care, in the Royal Infirmary, he found the stomach quite full of blood ; but not a trace of aneurism or other organic disease could be detected.

SUMMER QUARTERS IN THE PUNJAUB.

Our readers will peruse with interest the following account of the heat and consequent sickness experienced by European troops quartered about Peshawur during the past summer.

The letter from which these extracts are taken, was written by a medical gentleman in her Majesty's service, and is dated Peshawur, 26th September 1849.

" And first, thank God, we have at last got to the end of the hot season, for four months of such misery I never experienced anything like, nor will I ever again if I can help it. We remained encamped on the plain at Jumrood till the 6th May. It had before then been getting hot, but thunder-storms every few days cooled the air again. It was curious to observe how electricity accumulated there in certain objects, such as the canvass of the tent, after two or three hot dry days. Drawing the hand, or sweeping a towel inside along the walls or fly of the tent, or along one's bedding, and even the iron frame work, produced a broad streak of sparks, almost like a small flash. One night, late, a thunder-storm came on overhead, but instead of the dense clouds one is accustomed to see lightning from, there was only a thick, partly transparent, haze, through which the lightning darted; and it seemed, and was almost felt, as if all about one. It was *not comfortable*. I think it was that night a severe accident occurred from it in our regimental bazaar close to us. I wonder if it was connected with this state of electricity, that almost every man throughout the camp complained more or less of nausea, sometimes proceeding to *extremities*. In some the " *extremity* " came on suddenly, without nausea, or the slightest warning, and at awkward times. The whole force marched from Jumrood on the 6th May, and encamped by regiments in various places round the town of Peshawur, until the different buildings should be ready for them against the hot weather. The very next day the hot weather fairly set in with a scorching hot wind from the hills to the north-west. Day after day we were treated for many hours to these furnace blasts, the interval being never cool. Sometimes they came on at sunrise, and blew the whole day, with clouds of dust; but any hour in the twenty-four was quite the same to them. About eight or nine in the evening was a frequent time, lasting all night, or a great part of it. The thermometer would even then at once rise to 100° and upwards. Everything one touched seemed hot. One's garments, on putting them on, felt as if they had been *aired* at a fire to singeing. You may imagine what a comfortable night's rest we had. After a time some of us got *tatties*, made of a thorny plant, which grows in abundance around, and by keeping them constantly wet, and letting the wind blow through into the tent, a pleasant temperature was obtained—a hot wind was then wished for rather, as it was the only means by which one could be cooled. Others dug holes in the ground under the tents, and got into them during the heat of the day.   *   *   *   Some were glad to get places exactly resembling small prison cells, only they would scarcely be considered fit even for criminals in England now-a-days. On first coming, I frequently took refuge in one of them during the heat of the day. One gentleman, Major D., got possession of a deep dry well, dug a huge subterranean staircase leading to the bottom of it, and there remained from six A.M. till six P.M.; but whether he succeeded in all that time in finding what is said to lie in such places, I know not; but this I know, I was several times glad to join him in the search, as it was the coolest place of the whole till my own was ready. I did not like the house, but chose a clump of very large mulberry trees in the adjoining orchard. The trees are quite equal to large elms, and give an excellent shade. In the centre of the clump I had my tent pitched, and a large thatched pent-roof built over it. Inside the walls of the tent the ground is dug out to the depth of six feet, giving me an apartment of about twelve feet square; the walls are matted round; and here, with the aid of a punkha overhead, constantly pulled, I have got through the hot weather as well as most. The thermometer never rose above 96° in it. I get in and out by a wooden ladder. It always puts me in mind of a bear's den in the zoological gardens, and many a good growl I have had in it. I have another tent pitched in the garden for sleeping in.   *   *   *
The ground in the orchard is frequently irrigated from the numerous streams that are led through for the purpose; from the constant moisture, when the sun gets low, it soon becomes cool in the orchard, at least comparatively s͠

then the change in the evening into the dry bare ground, where the buildings and tents stand, is quite sickening from the heat. It always gave me the same sensation as sitting at dinner with my back to a large fire, a predicament in which I have been more than once. The thermometer at a late hour in the evening ranged from 95° to 100°. Imagine, then, sitting down to dinner at such a temperature! It continued hot all night, and there was nothing for it but to sleep in the open air. As to exercise, such a thing could not be even thought of. Fortunately, in the garden is a well of the depth of some seventy-five feet, and the water in it is very good, and always at a temperature of 55°—this was one great luxury; besides its own refreshing drink, it cooled all wines, &c., and throwing half-a-dozen chatties of it over the body was the only agreeable solace of the twenty-four hours. In addition to the heat, is another terrible torment, the sand-flies, they are so small and colourless as to be with difficulty seen; they are furnished with a proboscis like a gnat, with which they go poking away into the skin, clothes or no clothes, ten times oftener and more rapidly than a musquito; they are so numerous, too, that no musquito curtain can keep them out.

"In the beginning of June, fever began to attack a number both of men and officers, from 20 to even 60 a-day being admitted to hospital, and at one time we had upwards of 200 men on their backs with it, besides a great number *hors de combat*. Fortunately in very few was it of longer duration than two days, but it was smart, and left the patient reduced and weak to an extraordinary degree. In that month we had upwards of 600 cases of fever in hospital, and lost five, three of them from congestive apoplexy, as the Bengal people call it, super-vening. With, I think, only one exception, every officer in the regiment had this fever, some twice, and even thrice. At its height, first one assistant-surgeon and then the other caught it, so you may suppose the labour that devolved on me for a few days, in such a temperature, was no trifle. The thermometer used then to rise in the day time to 103° in the hospital, and to 105° in the barrack-rooms, several of which we had to convert into wards. At sun-rise from 86° to 90° in the wards; the latter temperature was in August.

"The fever was at first thought to be owing to the particular locality, but it subsided in this locality towards the beginning of July, and then attacked the European soldiers on the other side of the town, on a kind of locality quite different —open and dry. Almost every European in the place had it, excepting one regiment located in the town. I held out so long that I thought I was to escape; however my turn came. It lasted the usual two days, and then left me wasted and helpless like the rest. Instead of the usual return of desire for sustenance on the subsidence of fever, there was for ten days perfect indifference, or rather dislike, to everything, even to cold water or drink of any kind; and it was many days after that, before a proper relish for food returned. Almost all were the same; and a most melancholy set of scare-crows—ghosts of their for-mer selves—were to be seen crawling about, instead of the fine body of men, full of health and spirits, that had marched into Peshawur three months be-fore. July was better; two or three thunder-storms with rain revived us all wonderfully, and our sick list fell to 70. Up again in August, the temperature higher than ever, and becoming daily more oppressive from the air getting loaded with moisture. The 13th was a terrible day. In the afternoon four men were attacked, all within a few minutes, with congestive apoplexy, and several more were threatened with it. All were in hospital with slight attacks of fever. Three died in a few hours, making seven deaths from the same cause since the first of the month, and twelve during the hot weather. The 14th day commenced still worse, the thermometer at 90° at sunrise, and the oppres-siveness very great, and we were fully expecting more fatal results; but after mid-day the haze thickened, clouds formed, and came down in rain, thunder, &c., giving us all new life. It became very hot again, but none of that op-pressiveness, and continued so till about a week ago, when we again had rain, and since then the nights and mornings have been delightfully cool, and the day quite bearable under good cover; the thermometer being only 86°."

LONDON SURGERY.

In the Court of Queen's Bench, on Monday the 10th of December, a trial took place for damages, claimed on the ground of neglect and mismanagement in the treatment of a fractured thigh-bone, entailing upon the patient—a girl 11 years of age—shortening of the limb to the extent of *two inches*. Into the merits of this case it is not our intention to enter, farther than to express approbation of the verdict, which was against the plaintiff, who appears to have been one of those ungrateful, troublesome, and insolent individuals, always ready to become the tools of vindictive malevolence. But there were certain statements in the evidence that seem to require very serious consideration. Sir B. Brodie, Mr Guthrie, Mr Stanley, and Mr Bransby Cooper, were examined, and, as appears from the *Times'* report, deposed as follows :—

Mr Stanley.—" It was in the upper third of the thigh-bone. Such a fracture would be difficult of adjustment in an adult, but still more so in a child of that age, from the influence of certain muscles interfering with the bone, and producing a strain. I doubt whether, under the most favourable circumstances, the difficulty could have been surmounted."

Sir Benjamin Brodie.—" Upon the whole of the evidence, I see no reason to doubt that the child was properly treated. Such a fracture is very difficult to be treated ; and it is very seldom we can make the thigh as long as it was. It is generally attended with shortening of the limb."

Mr Bransby Cooper.—" I examined the child on Saturday. I think it was a good union, and not more deformity than I have seen in more favourable circumstances."

Mr Guthrie.—" The bone was irregularly united, but that could not be otherwise. He should say it was a good cure." —*Times*, December 11, 1849.

[We hope that there are few surgeons, in or out of London, who would subscribe to these statements. Under peculiar circumstances, shortening of the limb, to some extent, may, and does, occur after fracture of the thigh-bone, without blame being fairly imputable to the practitioner. But, surely such a result should be regarded as the *exception*, and not the rule of practice. This we say, without any feeling of unkindness to the defendant, giving him full credit for the alleged difficulties of his case, and sympathising with the gentlemen, whose names have been mentioned, in their anxiety to rescue a young member of the profession, from what certainly looked very like the toils of an ill-natured conspiracy. But we must protest against any considerations being held to warrant statements so derogatory to the character of British surgery, and so much calculated to throw a shield of protection over carelessness and want of skill. How can it be expected that regular practice is to be upheld, and "bone-setting" put down, if the public are told, by the highest surgical authority of London, that fracture of the thigh-bone is seldom remedied without shortening of the limb—and that when this occurs to the extent of two inches, the recovery may be considered GOOD !]

VARIETIES.

NUMBER OF STUDENTS IN EDINBURGH.—The total number of students attending the University of Edinburgh, this year, is 1,274, being 90 more than last year. Of these, 412 attend the medical, 656 the literary, and 206 the law classes. The increase in the number of medical students, over that of last year, is 44.

QUARANTINE IN CHOLERA.—All Italy is covered with quarantines, in order to oppose the pretended contagion of cholera. Tuscany, Piedmont, Lombardy, and the two Sicilies, are defended by quarantines, which vary from two to ten days, according to the port from whence the vessel sailed. Sardinia and Elba have adopted similar measures, but the disease has already appeared in these

islands, and it is not probable that sanitary cordons will accomplish there what they have failed to do in other places. There are some governments which seem incapable of deriving lessons from the past.—*L' Union Médicale*, Nov. 27, 1849.

SCHOOL OF MEDICINE AT CONSTANTINOPLE.—This institution continues to flourish, and has lately been greatly improved by alterations introduced into it by Salich Effendi, first physician to the Sultan. A medical journal has also appeared—" The Medical Gazette of Constantinople," conducted by the director and sub-director of the Medical School.—*Ibid.*

M. DUMAS AND THE MINERAL WATERS OF FRANCE.—One of the first acts of M. Dumas, as Minister of Commerce and Agriculture, has been to invite the Committee of Public Hygiene to ascertain more exactly the utility of the mineral waters of France in the treatment of disease. For this purpose he has proposed to establish, at the different springs, clinical instruction for such students as have distinguished themselves in the hospitals, and requested the Committee to indicate to him,—1st, The establishments which, from their importance and the character of their springs, are most worthy of being studied ; and 2d, What number of students should be attached to each establishment, and what should be the duration and nature of their studies.—*Gazette Médicale*, Nov. 24, 1849.

HONOURS CONFERRED ON FRENCH MEDICAL PRACTITIONERS FOR THEIR SERVICES DURING THE CHOLERA.—All the French journals have lately given an account of honours, conferred by the President of the French Republic on those medical men who have been most active in their exertions during the cholera epidemic. The rank of Officer of the Legion of Honour has been conferred on Drs Melier and Rostan ; the cross of that order on Dr Stuart Cooper, and twelve other physicians ; and medals of honour on a great number of citizens of all ranks, professions, and countries.

LIBERTY OF MEDICAL PRACTICE IN THE UNITED STATES.—Virginia has, for a population of 1,239,797, 1,517 medical practitioners, or 1 for 812 individuals. In the Transactions of the American Medical Association, the following attempt is made to classify 972 of the above :—Licentiates of medical schools, 678 ; possessing no diploma, 249 ; student of two years, 1 ; of one year, 10 ; of shorter periods, 4. There remain 228 who have commenced practice some fine morning, without any previous preparatory study. And why not ? says Jonathan ; so much the worse for those who consult them ! If everybody is permitted to vote for the representatives of the country—to choose its president—why should anybody be prevented from choosing his own doctor ? In choosing a bad representative, a man endangers the country and society at large, but in selecting a doctor, if he makes a mistake, it can only hurt himself.

PRIZE FOR THE PREPARATION OF ARTIFICIAL QUININE.—The Societé de Pharmacie of Paris offers a prize of 4000 francs for the production of artificial quinine—*i. e.*, of the alkaloid, formed without the use of cinchona, or other vegetable containing quinine. If quinine cannot be produced, the prize will be given to the person who exhibits a new vegetable principle, natural or artificial, resembling quinine in its properties, and capable of being used instead of it in medical practice. All memoirs on the subject to be addressed to the secretary-general of the Societé, before the 1st January 1851.

AMERICAN VIEW OF HOMŒOPATHY.—The genteel Lilliputian quackery of our day, which bears the imposing name of homœopathy, is another example of the utter absurdity of rejecting all experience and common sense, for the sake of a baseless theory : a system which, as the sailors say of a ricketty ship, is only kept together by its paint. Homœopathy is a thing of words, without ideas ; a wild dream of medical indigestion, without coherence of parts, or basis of fact. It is unreality set to practice nothingness.—*American Journal of Dental Science.*

BOOKS RECEIVED.

An Exposition of the Case of the Assistant-Surgeons of the Royal Navy. By a Naval Medical Officer. London, 1849. 8vo. Pp. 28.— (A plain and convincing statement.)

Rees (Dr G. O.) on Lemon-Juice in Rheumatism. 8vo. London: Churchill. 1849.

Alcock on Cholera. 8vo. London: Churchill. 1849. Pp. 190.—Noticed in present Number.

Billing—First Principles of Medicine. Fifth Edition. 8vo. London: Highley. 1849. Pp. 332.—Will be reviewed.

Callaway on Dislocations and Fractures of the Clavicle and Shoulder-Joint. 8vo. Plates. London: Highley. 1849. Pp. 178.

Shapter on Cholera in Exeter. 8vo. Woodcuts. London: Churchhill. 1849. Pp. 297.—Noticed in present Number.

The Harveian Oration. By John Carr Badley, M.D. 1849. 8vo. London: Churchill. Pp. 20.

Lee (Dr Robert) on the Ganglia and Nerves of the Heart. 4to. London, 1849.

Nineteenth Annual Report of the Belfast District Asylum. Drawn up by R. Stewart, M.D. Belfast, 1849.

Hassall's Microscopic Anatomy. Part Fifteenth, and last, with coloured plates.—Will be reviewed.

Letter to the Lord Chancellor from the Commissioners in Lunacy. 8vo. London, 1849. Pp. 12.

Stephen's on Cholera. 8vo. London: Renshaw. 1849. Pp. 47.

Snow on the Communication of Cholera. London. 8vo.

Combe on Digestion and Dietetics. Ninth edition. Edinburgh: Maclachlan and Stewart. Post 8vo. Pp. 191.

Perceval on Medical Ethics. 12mo. 1849. Oxford: Parker. Pp. 194.—Will be reviewed.

Code of Ethics of the American Medical Association. 12mo. 1849. Oxford: Parker. Pp. 36.—Will be reviewed.

Golding Bird on Electricity and Galvanism. 12mo. 1849. London: Longman. Pp. 212.—Will be reviewed.

Liebig's Annual Report on the Progress of Chemistry, &c. Parts I., II., and III. 8vo. London: Taylor, Walton, and Maberly.— Will be reviewed.

Report of Pathological Society of London. Third edition. 1849.

Syme on Stricture of the Urethra. 8vo. 1849. Edinburgh: Sutherland and Knox. Pp. 72.

Syme on Medical Reform. 1849. Pamphlet. Sutherland and Knox.

Guy's Hospital Reports. October 1849.

Dr W. Budd on Cholera. Pamphlet. 8vo. 1849. London: Churchill.

First Report of the Brompton Hospital for Consumption and Diseases of the Chest. 1849.—Will be reviewed.

Remarkable Case of Uterine Hydatids. By James George Davey, M.D. Colombo.

Report on the Nature and Import of certain Microscopic Bodies found in the Intestinal Discharges of Cholera. By a Sub-Committee of the Cholera Committee of the London College of Physicians. London, 1849.

On Diseases of Children. By Dr Churchill. Dublin: Hodges and Smith, 1850. 8vo. Pp. 656.—Noticed in present Number.

On Painful Affections of Nerves. By Dr C. Toogood Downing. London, 1849.

Die Medicinschen Zustände der Gegenwart. Von Dr Graevell. Berlin, 1849.

Locke and Sydenham. A Review. Edinburgh, 1849.—Noticed in present Number.

American Journal of Dental Surgery.

Neue Medicinisch-Chirurgische Zeitung. Vol. IV. 1843. Augsburg.

On Stammering and its Treatment. By Bacc. Med., Oxon. 8vo. London: Churchill. 1850.

Principles of the Human Mind. By Alfred Smee, F.R.S. 8vo. London: Longman. 1849.

Essays on Syphilis. By John Hamilton. 8vo. Dublin: Fannin & Co. 1849.

Sanitary Economics, or Our Medical Charities. By Alexander P. Stewart, M.D. 8vo. London. 1849.

Recherches sur la Paralysie Générale. Par Le Docteur L. Lunier. 8vo. Pp. 118. Paris.

Lecture, Introductory to a Course of Clinical Medicine, delivered in the Glasgow Royal Infirmary. By J. A. Easton, M.D. Glasgow, 1849.—Noticed in present Number.

On the Treatment of Chronic Inflammation of the Bladder by Injections of Nitrate of Silver. By R. L. MacDonnell, M.D. Montreal, 1849.

On the Treatment of Sclerotitis and ScleroIsitis by Hydriodate of Potash. By R. L. MacMonnell, M.D. Montreal, 1849.

Duties and Qualifications of Physicians. By John Ware, M.D. (Reprinted from American Edition). Oxford: Parker. 1849. 12mo. Pp. 40.— Will be reviewed.

Kinesipathy, or the Cure of Diseases by Specific, Active, and Passive Movements. By Augustus Georgii. London. 1850.

Report of the Pennsylvanian Hospital for the Insane, for 1848. By Thomas S. Kirkbridge, M.D. Philadelphia, 1849.

A Plea of Humanity in behalf of Medical Education. By Alexander Stevens, M.D., LL.D. 4th Edition. New York, 1849.

EXCHANGE LIST.

British and Foreign Medico-Chirurgical Review.—Received regularly.

Dublin Quarterly Journal of Medical Science.—Do. do.

American Journal of Medical Science.—October No. just received.

Annales Médico-Psychologiques.—July No. received.

Vierteljahrschrift für die practische Heilkunde. Prague.—None received for many months. If not soon sent, the exchange must stop.

Schmidt's Jahrbücher.—Received regularly.

Zeitschrift der K. K. Gesellschaft. Vienna.—Not regularly received.

Heller's Archives für Physiologische und Path. Chemie und Mikroscopie. Vienna.—Not regular.

Oesterreichische Wochenschrift. Vienna.—None received during 1849.

Medicinische Jahrbücher. Vienna. Do. do.

All the Austrian Journals are received so irregularly, that unless better means of transmission are adopted, we must stop our exchange. Our own Journal is forwarded regularly.

Zeitschrift für Rationelle Medicin von Henle and Pfeufer.—Received most irregularly, and, of late, not at all.

Bibliothek for Laeger.—Received, but rather late.

Hygiea. Stockholm.—Received irregularly, and at long intervals.

Psychological Journal.—Not regular.

Veterinary Record.—Received regularly.

Pharmaceutical Journal.—Do. do.

London Journal of Medicine.—Do. do.

Archives Générales de Médecine.—Do. do.

Philadelphia Medical Examiner.—Regularly received.

Charleston Medical Journal.—Always comes by post. All Journals must be sent free of charge, like our own.

Annales de Thérapeutique.—None received for many months. We must stop our exchange.

Journal de Médecine et de Chirurgie.—Received regularly.

Revue Médico-Chirurgicale.—Do. do.

Annali Universali di Medicina.—None received during 1849.

Chemical Gazette.—Regularly received.

Provincial Medical and Surgical Journal.—Do. do.

Medical Gazette.—Do. do.

Medical Times.—Do. do.

Dublin Medical Press.—Do. do.

Gazette Médicale de Paris.—Do. do.

Gazette des Hôpitaux.—Do. do.

L'Union Médicale.—Do. do.

Bulletin Général de Thérapeutique.—Do. do.

Gazetta Lombarda.—Do. do.

Oppenheim's Journal.—A large package lately received. We shall in future be happy to exchange.

N.B.—French Journals are forwarded to us by J. B. Baillière, Paris.

German Journals should be sent through the House of Hartmann in Leipsic, to care of Williams and Norgate, Henrietta Street, Covent Garden, London.

NOTICES TO CORRESPONDENTS.

COMMUNICATIONS have been received from Dr Jenner, London ; Dr James Morton, Glasgow; Dr Heslop, Birmingham ; Dr Williamson, Brighton ; Mr Hood, Kilmarnock ; Mr Grossart, Whitburn.

The transactions of the Edinburgh Obstetrical Society will appear in our next Number.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Notice of a Case illustrative of the Treatment and Fatal Dose, in Poisoning with Hydrocyanic Acid.* By ROBERT CHRISTISON, M.D., Professor of Materia Medica in the University of Edinburgh.

A GENTLEMAN, about sixty years of age, whose mind had begun to give way under the pressure of dissipation and misfortune, and who had several times threatened to commit suicide, hastily summoned his wife one evening, told her he had just taken prussic acid to put an end to his miseries, and immediately fell down senseless on a sofa, without either cry or convulsion, but drawing his breath deeply, forcibly, and slowly. Medical aid was instantly sent for in all directions. Nearly half an hour appeared to have elapsed before I reached him. Dr Adam Hunter and Mr Carmichael had arrived, however; the stomach-pump had been immediately resorted to; and the first stroke of the pump was made as I entered the room.

The convulsive respiration at the outset had been soon succeeded by regular breathing, with snorting inspiration, and moaning expiration. The insensibility was complete from the first; the body was excessively relaxed, and without any convulsive movement; the eyes were wide open, staring straight forward upon vacancy, injected, watery, and with the pupils somewhat contracted, but not more so than they often are naturally in persons of his age; and the face and head were congested and hot. The introduction of the tube of the stomach-pump did not elicit the slightest sign of consciousness. In this state I found him on my arrival—wholly unconscious under all ordinary mechanical stimulation, totally relaxed and powerless, and breathing deeply, laboriously, and stertorously, but with ordinary frequency. The pulse was above 100, very small, feeble, yet regular.

The first liquid withdrawn by the stomach-pump, amounting to six ounces, was a colourless, nearly clear, watery fluid, being little else than water introduced by the pump upon an empty stomach; for he had taken no food since breakfast. My two friends could not observe any odour of hydrocyanic acid in this fluid, even while warm and fresh drawn; and I could detect it only faintly, and, I must admit, equivocally, on whiffing it slowly and steadily for some

seconds. Nor was there any hydrocyanic acid odour in his breath, or near him, or in any part of the room.

The stomach was quickly and repeatedly cleared out, and ammonia was applied to the nostrils from time to time, but without any sign of reviving consciousness. His head was then brought to the edge of the sofa, and, while it was held over a bucket, a stream of cold water was gently and steadily poured over it for two minutes from a large jug, a foot or so above him. During this proceeding the breathing rapidly became deeper and softer, and without snoring. The head and face, very much cooled, presented less turgescence. The eyes were suddenly turned in a lateral direction, and then an attempt seemed to be made to fix them upon any one who put a question in a firm voice. From this time he slowly recovered without any further treatment; and, in an hour and a-half from the time when he gave the alarm, he was able to mutter Yes and No correctly when questioned, and he could turn on his side without assistance. When not roused, however, by being spoken to, he fell into a restless sopor, with moaning and tendency to shivering. In three hours he was tolerably sensible, but drowsy; he slept profoundly all the subsequent night; and next morning he was quite sensible, though still sleepy. His mind was evidently unhinged, but not more than before the act; and it has continued more or less so ever since, rendering seclusion from general society indispensable.

As in this instance no bottle could be found in the room or under the window, and no satisfactory hydrocyanic odour could be perceived in the apartment, in the breath, or in the fluid first withdrawn from the stomach, a doubt might justly have arisen whether hydrocyanic acid had been really swallowed. The symptoms, however, were so similar to those described as attending the slower cases of poisoning with this substance, as to leave at the time scarcely any doubt in my mind. Accordingly, on examining the liquid first withdrawn, I detected the poison in it by chemical analysis. It was first subjected to distillation, after the addition of a few drops of sulphuric acid; and half an ounce of clear fluid was thus drawn off. This had only a very doubtful hydrocyanic odour, although there was no other odour strong enough to cover it. But on adding two drops of the pharmaceutic solution of potash, then a few drops of the two sulphates of iron, mixed in the proportion of one equivalent of sesquioxide-sulphate and two of protoxide-sulphate, and lastly a single drop of sulphuric acid, a considerable precipitate of Prussian blue was obtained instantly and characteristically. Meanwhile the patient gradually admitted, that he had asked, in the morning of the act, at a certain druggist's, for a sufficient dose of prussic acid, of full strength, to kill a dog, and that he got a drachm. The druggist afterwards supplied Dr Hunter with what he believed to be a similar quantity from the same stock. This I found to amount to forty-five minims; and, on applying the very convenient test of the Edinburgh Pharmacopœia, I ascertained that it was of the due

strength, and neither too weak nor too strong. The acid, therefore, contained about a thirtieth of pure hydrocyanic acid; so that our patient had taken between a grain and a-half and two grains of radical hydrocyanic acid.

The practical deductions to be drawn from this case are various, and not unimportant.

1. The symptoms being so intense, while there still remained some poison to be absorbed from the stomach, little doubt can exist that the case would have proved fatal without assistance. Since the trial of Mr Tawell, doubts have been expressed as to the accuracy of the statement in my book on Poisons, p. 770, that two-thirds of a grain may prove fatal; because the facts on which that statement is founded had not been very accurately recorded by their authors. The present case, however, will at all events render it in the highest degree probable, that a grain and a-half will prove adequate to occasion death.

2. It is clear that death may be caused by hydrocyanic acid without any odour of it being remarked in the breath, or in the first fluid withdrawn from the stomach, even although the odour be carefully sought for, and although the poison be present.

3. The notion entertained by various writers in the London journals on the occasion of the trial of Tawell, that it is an invariable circumstance, that a piercing cry ushers in the action of a poisonous dose of hydrocyanic acid, is evidently erroneous, and founded on limited experience.

4. Dr Herbst of Göttingen was the first to propose the cold affusion as a remedy for poisoning with hydrocyanic acid. Mr Bankes of Louth seems to have been the first to substitute the cold *douche* of the head only. For many reasons, the latter would seem, *a priori*, to be the more suitable; and the present case shows that it · is an energetic remedy, when the other means available in so urgent an emergency are inefficacious.

ARTICLE II.—*On the Site of Morbid Action in Diseases of Bone.* By JOHN GOODSIR, Professor of Anatomy in the University of Edinburgh.

I HAVE, in another place, directed the attention of the physiologist to the important distinction which exists between the essential and accessory elements of a texture. "A texture may be considered either by itself or in connection with the parts which usually accompany it. These subsidiary parts may be entirely removed, without interfering with the anatomical constitution of the texture. It is essentially non-vascular, neither vessels nor nerves entering into its intimate structure. It possesses in itself those powers by which it

s nourished, produces its kind, and performs the actions for which it is destined ; the subsidiary or superadded parts supplying it with materials, which it appropriates by its own inherent powers, or connecting it in sympathetic and harmonious action with the other parts of the organism to which it belongs." [1]

The neglect of this distinction by the pathologist has been the cause of much misconception regarding morbid action in textures, and has introduced many errors into the general theory of disease.

Disease may have its site either in the essential or accessory elements of a texture.

Our knowledge of the diseases which have their site in the essential elements of the textures is still in its infancy; but I am inclined to believe that they consist principally of alterations in the nutritive and reproductive functions, in the chemical or physical constitution of the textures. The fatty degeneration of the muscular texture is a familiar example of a morbid change of this kind.

The great majority of the recognised morbid changes have their site in the accessory elements of textures. They are situated in the midst of the areolar texture, and among the vascular and nervous networks which separate as well as connect all the essential textural elements of the frame. They consist generally of bloody or other infiltrations ; of lymph, in various stages of development; of pus ; of the various forms of new formation, such as cancer, tubercle, &c. It will thus be perceived that the majority of diseases are situated, not in the essential textures of a part, but around or amongst them ; that the majority of these are new formations, parasitic in their nature, making their appearance, undergoing development, and occupying a position in the areolae of that general connecting texture, which, either in the form of the nucleated cellule, or of the filamentous fibre, is the first to appear, as well as the most lasting and abundant, of all the textures.

The more distinct the conception, therefore, which an observer may possess of the relative position of the essential and accessory elements of any given texture, the better prepared will he be to investigate and understand the phenomena of diseased action in that texture.

The successful investigation of the site and phenomena of diseases in one texture will render the investigation in all the others comparatively easy. I have been accustomed to consider the osseous texture as best adapted for this purpose, from its stability, and the comparative ease with which its essential and accessory parts may be separated from one another, distinguished, and examined. " A well-macerated bone is one of the most easily made, and at the same time one of the most curious, anatomical preparations : it is a perfect example of a texture completely isolated ; the vessels, nerves, membranes, and fat,

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[1] Anatomical and Pathological Observations, p. 64.

are all separated, and nothing is left but the non-vascular osseous substance." [1]

The essential elements of the osseous texture consist of all that part which resists maceration, along with the contents of the corpuscles.

The accessory elements are the periosteum, with the vessels and nerves which ramify in it; the cells, areolar texture, fat, vessels, and nerves, which occupy the continuous network of haversian canals and cancelli, which are hollowed out in the hard substance.

Of the Morbid Changes in the Essential Element of Bone.—In the course of lectures which I delivered in the theatre of the College of Surgeons, in the winter of 1842-3, I announced the existence, and hazarded a hypothesis as to the functions, of minute masses of nucleated particles, occupying the corpuscles of bone, which are generally believed to be empty spaces. I, at the same time, stated, that I had been led by my observations to consider it as highly probable that caries, or intractable ulceration of cancellated bony texture, consisted essentially in more or less complete obliteration of the corpuscles and their contents, as well as of the connecting canaliculi, and the neighbouring haversian canals.

I have lately repeated some of my observations on these bodies, and have been confirmed in my belief of their importance in the economy of bone, and more especially of their obliteration in caries. Caries never attacks compact bone. It is met with only in shafts, when expanded by previous disease, in the epiphyses or extremities of the long bones, and in the short bones. It occupies surfaces somewhat limited in extent, irregularly hollow, with a surface hard and spicular, encroached upon, but not generally covered by, unhealthy granulations, the pus discharged from which has very generally mixed with it minute portions of bone, apparently thrown off from the carious surface. Caries is to be distinguished from the mere absorption of the surface of a bone, as well as from that open condition of the cancellated texture which is the result of the removal of the cartilaginous and osseous articular surface. These two latter conditions of bone are capable of cure, although slowly and with difficulty, partly in consequence of the disease which accompanies or precedes them, but principally because the cancellated texture contains few haversian canals, the abundance of which in the shafts of bones explains the vigorous actions which they exhibit.

In true caries, it may be observed, that for a certain depth below the surface of the affected part, the corpuscles and canaliculi have more or less completely disappeared, so that the subjacent unaltered osseous texture is covered in by a layer of apparently homogeneous solid bone resembling marble. It is analogous, in some respects, to the enamel of the teeth—1, in not being covered by soft

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[1] Anatomical and Pathological Observations, p. 64.

parts; 2, in being a portion of the exterior surface of the body; 3, in containing no corpuscles or canaliculi; 4, in being incapable of absorption, and requiring, therefore, to exfoliate, or to be removed artificially.

I am not prepared at present to enter upon the consideration of the changes which the essential element of bone undergoes in rickets, malecosteon, &c., but shall refer, in the meantime, as confirmatory of my own views and observations regarding the condition of the corpuscles and canaliculi in disease, to the recent work of Von Bibra and Geist.[1] In this work, which is principally devoted to the consideration of that peculiar necrosis, which attacks the jaws of the workmen engaged in making phosphoric matches, the authors have allotted a section to the microscopic structure of various forms of diseased bone. They have described and figured the empty condition and the altered form of the corpuscles, as well as the obliterated canaliculi in certain forms of exostosis and caries, without attaching apparently much importance to the observation.

Of the Morbid Changes in the Accessory Parts of Bone.—The greater number of the morbid changes in the accessory parts of bone occur during that condition usually called inflammatory.

As the accessory parts are situated on the external and internal surfaces, and in the haversian canals[2] of bone, the changes which occur during inflammatory action make their appearance only in these situations.

The increased vascularity which the texture presents when inflamed, depends in the first place on the engorgement, and in the second on the increase in number of the vessels which are situated in the periosteum, the medullary membrane, and the haversian canals.

After the accession of inflammatory action, the surface of compact bone assumes a porous condition, and its substance becomes more or less cancellated. This change is induced by an action similar to that by which the cancelli of healthy bone are formed. The haversian canals assume an increased calibre, so that their orifices on the exterior surface of the bone become larger, and their cavities ultimately open into one another laterally, and assume the appearance of cancelli.

As the haversian canals increase in size, their cavities are filled, in the first place, by enlarged and new blood-vessels; and in the second, and principally, by a substance having a gelatinous appearance, similar to the lymph effused in other inflamed textures.

[1] Die Krankeiten der Arbeiter in den Phosphorzündholzfabriken, insbesondere das Leiden der Kieferknochen durch Phosphordämpfe, p. 77-86.
[2] See Howship's " Observations on Healthy and Diseased Bone," in the 6th, 7th, 8th, and 10th vols. of the Med.-Chir. Transactions, London.

When the inflammation extends to, or occurs at, the external surface of a bone, the periosteum is raised by the effusion, dragging out or extending the processes, which stretch from its external surface into the superficial haversian canals ; and as the texture which occupies the canals is the formative organ of bone, these retracted processes are the centres from which new deposits of bone proceed.

When the action is acute, and occurs in certain constitutions, death of the inflamed bone may take place before any very decided change has appeared in the haversian canals.

But if the inflammation is more chronic, new bone is formed soon after, or along with the enlargement of the haversian canals. This new bone is situated around the orifices of the canals, enclosing the processes which have been drawn out by the sub-periosteal effusion, so that the surface of an inflamed bone presents numerous orifices of enlarged and open haversian canals, with their lips more or less thickened or everted; the internal half of the convex edge, which bounds an orifice belonging to its own lip, the other half to those of the neighbouring canals. The inflamed surface is now slightly elevated by this new deposit of bone, the degree of elevation and the size of the canals being greatest at the centre of the inflamed spot, or where the action was most acute. This process of deposition continues for some time, and exhibits in section a structure similar to that of the subjacent inflamed old bone, the haversian canals being large, and assuming more of a direction rectangular to the surface.

An enlargement by absorption now occurs in certain haversian canals, in the new and old bone.

If the inflammation is periosteal,—that is, if it be confined to the superficial part of the bone, this secondary absorption takes place in the first formed canals of the new bone, those on its deep surface, and in those of the external aspect of the old. There now appears, in consequence of this absorption, a line of cancellated texture between the new and old bone. If the action has involved more or less of the entire thickness of the compact wall of the shaft, the secondary absorption invades, from the surface inwards, a greater or less extent of the old bone, and less of the new. While the inflammatory action and the process of absorption continues, new deposit of bone still appears towards the surface, increasing the swelling, and preserving the more compact structure of the periosteal aspect.

By modifications of this general mode of action, all the varieties of inflamed bone are induced.

A node is produced by an action such as has been now described, occurring over a limited portion of the periosteal surface, the inflammation and secondary absorption not extending, in general, deeply into the surface of the old bone, but confining themselves to the newly formed texture.

A section of a common osseous node, therefore, presents, from the

external surface inwards, first, its periosteal compact surface, the haversian orifices of which are larger than those of the healthy bone, and largest at the most prominent part of the node; secondly, its cancellated texture, consisting of enlarged anastomosing irregular haversian canals; third, a layer of the external surface of the original bone cancellated,—that is, with its haversian canals enlarged over an extent equal to the base of the node, and to a depth corresponding to the progress of the inflammatory action inwards.

In some nodes the section exhibits the secondary absorption entirely confined to the new bone, so that the latter appears as if it had been entirely developed in the periosteum, and had not become intimately united to the surface of the old bone.

The uniform, or more or less irregular, thickening of the shafts of bones which have suffered from chronic inflammation of a specific character is produced by modifications of the same process of deposition and absorption as occurs in the formation of nodes. The orifices of the haversian canals on the surface of the expanded shafts are all more or less enlarged, especially where the action has been greatest, and the bone most prominent. They exhibit various modifications of the ring-shaped or tubular osseous deposit which has been formed around, and encircles, each of them; and according as these happen to be arranged or combined, we may observe the surface covered by tuberous, spicular, stalactitic, or obliquely-lamellar processes, the osseous edges and extremities of which represent the haversian orifices with corresponding peculiarities of character and combination.

Sections of enlarged shafts exhibit, on a more extensive scale, the results of secondary absorption, similar to those which occur in nodes. When this absorption has been more or less completely confined to the new bone, the original wall of the shaft may be traced through the section with more or less of its original thickness. When the entire thickness of the shaft has been affected, then the absorption will have extended over a greater or less extent of the compact texture of the original wall, and the entire bone will be light and cancellated.

In nodes and enlarged shafts we occasionally observe alternate layers of compact and cancellated bone more or less regularly disposed. This is one of those appearances which have given rise to the expansion theory of enlarged bone. But as bone enlarges in disease, as in health, by reciprocal depositions and absorptions, this laminated arrangement cannot be explained by the hypothesis.

It would appear to be the result of renewed inflammation nearly in the planes of the compact laminæ of the originally cancellated node or shaft, and a consequent deposit of new bone narrowing the canals, and rendering compact a plane of bone immediately exterior.

The spicular, nodular, or lamellar processes which are developed

around ulcerated or carious surfaces, and at the margins of exfolia-
tions, are produced in the same manner by modifications of the ha-
versian canals of the part.   The extreme modification of this kind
of enlarged bone is exhibited by the more or less complete osseous
shells which envelope dead shafts, and the origin or source of which
have given rise to so much controversy in the pathology of necrosis.

The areolar and vascular texture contained in the haversian canals
of bone is also the site of all cancerous, medullary, sarcomatous,
fibrous, and scrofulous deposits, and tumours in bone.   The essen-
tial element of the texture is in no way affected by these new for-
mations.   The cells, granules, and plasma of which they consist be-
come developed, and propagate themselves in the areolar and vas-
cular net-works within the canals, like the sporules, thallus, and
phycomater of fungi : the walls of the osseous canals giving way by
absorption before the increasing mass of new organisation.

But here also, as in the inflammatory affection of bone, the ab-
sorption of one part is accompanied by deposition in another.

It is highly interesting to observe how the spicular and laminated
masses which lie imbedded in cancerous and medullary tumours of
bone, if traced back to the old bone from which they arise, will be found
to spring from between the more. enlarged haversian orifices, out of
which the parasitic masses have protruded ; and how these spicular
lamellated processes derive their characteristic forms and directions
from this anatomical arrangement.

Ulceration of bone consists in the entire removal of the osseous
texture of a part by the continued and complete absorption of the
walls of the haversian canals of the part affected.   It is important
to observe that this absorption or ulceration of bone never takes
place without a corresponding deposition of bone in the neighbour-
hood.

I have therefore been led to conclude,—

1. That in the osseous, as well as in the other textures, we must
distinguish between those morbid conditions which have their site in
the essential, from those which are situated in the accessory, parts of
the texture.

That, in reference to the changes in the essential parts of bone,

2. Caries, one of the most obstinate and painful affections of the
texture, depends on the more or less complete obliteration of the
corpuscles and canaliculi, and the conversion of the carious surface
for a certain depth into a substance resembling the enamel of the
teeth.

3. That all the inflammatory changes in bone have their site in,
and depend on, the increase or diminution in the number and size of
the haversian canals.

4. That all the malignant and non-malignant growths in bone
have their site in the haversian canals.

5. That the various forms of spicular and laminated exostosis,

which are found co-existing with malignant or non-malignant growths, are necessary results of the dilatation and extension of the affected haversian canals.

ARTICLE III.—*On Typhoid and Typhus Fevers,—An Attempt to Determine the Question of their Identity or Non-Identity, by an Analysis of the Symptoms, and of the Appearances found after Death in Sixty-six Fatal Cases of Continued Fever, observed at the London Fever Hospital from January* 1847 *to February* 1849. By W. JENNER, M.D., Lond., Licentiate of the Royal College of Physicians, Professor of Pathological Anatomy in University College, London.—(Continued from p.* 1275, vol. ix.)

LIVER.

Typhoid Fever.—Excluding eight cases, in which the liver was not examined, or which proved fatal after the 35th day of the disease, there remain fifteen for analysis.

Seven of the fifteen were opened during the first 24 hours; eight between 24 and 58 hours after death : six during the winter, nine during the summer months.

In eleven of the fifteen the consistence of the liver was normal; six of these eleven cases were examined during the first 24 hours after death, the remaining five between 24 and 44½ hours ; five of the eleven were examined during winter months, six during the summer.

In four of the fifteen—*i. e.*, about one-fourth—the liver was flabby; these four were examined respectively 11, 26, 32, and 58 hours after death, in the months of September, August, September, and January. The four cases proved fatal respectively on the 31st, 7th, 28th, and 30th days of disease.

In one of the four cases only was the organ noted to be of a doughy consistence—*i. e.*, it accepted and retained the impression of the fingers with facility. This was the third of the four cases above-mentioned.

The colour was noted to be normal in thirteen cases ; darker than usual in two cases—*i. e.*, about one-seventh.

Typhus Fever.—Seven of the forty-three cases are ineligible for analysis.

Seventeen of the remaining thirty-six cases were opened during the first 24 hours after death ; nineteen between 24 and 52 hours : sixteen were opened in the winter, twenty-five in the summer, months.

In fourteen of the thirty-six cases the liver retained its normal consistence; eight of these fourteen were examined within 24 hours, and five between 24 and 36 hours, after death : five during the winter, and nine during the summer, months.

In twenty-two, or three-fifths of the cases examined, the liver was flabby. Nine of the twenty-two were examined during the first 24 hours after death, thirteen between 24 and 52 hours after death: seven were examined during the winter, fifteen during the summer, months.

In seven of these twenty-two cases—*i. e.*, in one-fifth of the whole number of cases examined—the liver was of doughy or putty-like consistence. Six of the seven were examined between 22 and 36 hours after death: three during the winter months, four during the summer. Five of these seven died on or before the 14th day of disease; two at an uncertain period of the disease, but on the 3d and 6th days of their residence in the hospital, and therefore probably at an early period of the disease. While of twelve cases, the duration of which was known, and in which the liver was firm, or of normal consistence, eight—*i. e.*, two-thirds—survived the 14th day of the disease.

The colour of the liver was normal in twenty-nine of the thirty-six cases; deeper than natural in seven—*i. e.*, one-fifth.

The question examined above, it will be observed, is not that of the *absolute* cause of the softening of the liver in typhoid and typhus fevers, but that of the existence of external conditions, capable of accounting for the actual *difference* observed in the condition of the organ in the two diseases.

It will be seen, then, that about half the cases of either disease were examined during the first 24 hours after death, and, as near as possible, two-thirds of either disease during the summer months. The difference in the proportions of the cases in which marked alteration in the consistence of the organ occurred cannot, then, be attributed to any difference in the periods at which the cases of the two diseases were examined after death, nor to any difference in the temperature. Like the same change in other organs, as the kidneys and pancreas, it was probably the effect of the difference in the alterations in the solids induced by either disease, which difference was only manifested by the rapidity, &c., of the cadaveric changes.

GALL-BLADDER.

Typhoid Fever.—Notes were taken of the gall-bladder and its contents in fourteen cases, which proved fatal before the 35th day of disease.

In two cases only was the bile distinctly green, and in both it was thin and limpid. In four cases it was greenish yellow; and in eight cases yellow or orange.

In one case, which proved fatal on the 46th day of disease, two ulcers were found in the gall-bladder.

Typhus Fever.—The physical appearances of the bile were recorded in thirty-one cases.

In nine of them it was dark green; in nine greenish yellow; and in twelve yellow or orange.

In addition to this difference in hue, the bile was generally much thicker in typhus than in typhoid fever.

In no case of typhus was there any ulceration of the lining membrane of the gall-bladder.

PANCREAS.

Typhoid Fever.—This organ was examined in thirteen of the twenty-three cases. In four it was flabby; in nine of normal consistence. In all it preserved its natural colour.

Typhus Fever.—In eight of thirty-four cases in which the pancreas was examined, that organ was flabby; in the remaining twenty-six it was normal in consistence. In eight cases it was deeper red than natural; in twenty-six it preserved its healthy hue.

KIDNEYS.

As the amount of blood in these organs could have caused but little change from their normal weight, and the cases I am here considering are limited in number, I shall not enter on that subject, although I have notes of the weight of the kidneys in sixty of the sixty-six cases here considered.

The microscopic examinations I shall also reserve for some other occasion. It is sufficient to say that such examinations exhibited a marked difference in the structure (after death) of the kidneys in the two diseases. In the one (typhus) the tubes were in a much larger proportion of cases than in the other (typhoid fever) filled with detached epithelium scales. This separation I regard as cadaveric, and a part of that general tendency to the dissolution of tissue so eminently characteristic of typhus fever.

Typhoid Fever.—The kidneys were noted to be healthy in eight cases, congested in three, and pale in three. Of two others no note was made, so that they could have deviated but little in appearance from health.

Seven cases either survived the 35th day of disease, or those organs were not examined.

Consistence.—Excluding the above seven cases, the kidneys were noted to be flabby in one case, examined 47½ hours after death, in the month of October. In the other cases they were normal in consistence—at least they were recorded to be healthy.[1]

In two cases there was slightly increased vascularity of the lining membrane of the pelvis of the kidney.

The *urinary bladder* was examined in nine cases which proved fatal before the termination of the fever. In one case only did it

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[1] In every case recorded as healthy, the capsules were removed from the surface, and the kidney divided longitudinally.

present any deviation from health. The following is a description of its appearance :—Scattered over the mucous membrane of the organ were numerous patches of deep red, and here and there patches of a dull yellow, slightly elevated, smooth on the surface, and surrounded by an areola of deep red. When the yellow matter was removed by the nail, a slightly abraded surface was exposed, as if the mucous membrane had been carried away with it.

Typhus Fever.—Both kidneys were congested in eight cases; the left kidney only in one case. In twenty-seven cases they were considered healthy in appearance.

Consistence.—In five cases they were recorded to be flabby, or soft and flabby, in consistence. These five cases were examined respectively 16, 22, 27, 36, and 38 hours after death, and in the months of December, November, October, and May.

In thirty-one cases they were healthy.

In four cases the lining membrane of the pelvis was considered to be more injected than natural. In one of these cases it was studded with minute hemorrhagic points.

Seven cases either survived the fever, or were not examined.

The *urinary bladder* was examined in twelve cases which proved fatal by the 28th day of the disease. In one there was found congestion of its posterior wall, with numerous minute hemorrhagic spots in the same situation. In another the mucous membrane generally was slightly more vascular than natural. While in a third case the anterior wall of the viscus was very finely injected.

In the remaining nine cases the organ was pale and healthy.[1]

PERICARDIUM.

Typhoid Fever.—In one case only was any deviation from the normal condition of the pericardium observed. In that case a few shreds of lymph were attached to the pericardium, covering the auricle. In every case the fluid retained the yellow hue proper to it, and its amount was considered natural.

Five of the cases were examined, respectively 30, 32, 36, 44½, and 58 hours after death; three in the summer and two in the winter months.

Typhus Fever.—Excluding seven cases not eligible for analysis, there remain thirty-six for consideration.

In thirty-one cases no abnormal appearance was observed.

In five the serosity contained in the pericardium was of a more or less deep red colour. These five cases were examined, respectively 16, 24, 24, 40, and 48 hours after death : four during the summer, and one during the winter, months. That the red hue was due to the

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[1] Subsequent experience would lead me to suppose that I noted some kidneys as healthy which ought to have been regarded (comparatively) as softened.

transudation of the colouring matter of the blood, and not the consequence of effusion of blood, was proved by its containing no red corpuscles, by the number of epithelium scales diffused throughout it, by the deep red staining of the posterior wall of the auricles, and by a shade of discolouration bounding the edges of the veins coursing over the surface of the heart.

This cadaveric transudation of a solution of the colouring matter of the blood into the serosity contained in the pericardium, is another example of the greater tendency to decay impressed on the body by typhus than by typhoid fever; for it may be observed, that the period that elapsed after death, before the above five cases were examined, was exceeded by that before which five of the cases of typhoid fever were opened. One of the former, in fact, was inspected in the month of December, only 16 hours after death. Three of these five patients were less than forty years of age; the one last referred to was only twenty-two, so that neither difference in age, nor external conditions, was the cause of the want of similarity between the two diseases with respect to the change under consideration.

HEART AND ITS CONTENTS.

Typhoid Fever.—Excluding those cases in which the chest was not examined, and those which survived more than 35 days from the outset of the disease, there remain for analysis fifteen cases.

In no case was there any recent endocardial disease; in one there was a congenital malformation, a communication between the right and left ventricles; and in another, slight thickening of the free edge of the mitral, and induration of the base of the aortic valves.

The substance of the heart was firm or healthy in consistence in five cases; soft and flabby, or flabby only, in five cases; the right ventricle flabby, the left normal, in one case; of four cases no note on this point was made.

Of the five hearts that were flabby, one was examined an uncertain period after death; the other four respectively, 11, 22½, 32, and 36 hours after the fatal termination. The case in which the right side was flabby, and the left firm, was opened 27 hours after death; while the five subjects in which the substance of the heart was firm and normal in consistence, had been in the dead-house respectively 24, 30, 42½, 44½, and 58 hours.

The four hearts of which no note on the point here examined was recorded, were probably healthy in consistence, because other facts respecting them were noted. These four cases were examined within 20 hours after death.

The duration of the disease in the five in which the heart was flabby, was respectively 12, 21, 23, 25, and 28 days; in five cases in which it was firm, 20, 27, 30, 30, and 34 days; one case had lasted an uncertain time. In the four cases in which it was probably healthy, 17, 30, 32, and 33 days.

Thus four out of five cases in which the heart was flabby proved fatal by the 25th day of the disease, while only one out of nine of those in which it was firm, died so soon as the 25th day of disease. It will be remembered, that the only two cases of typhoid fever in which the cadaveric rigidity had entirely disappeared, proved fatal before the 25th day of disease. This seems to place the two series of facts in the same order.

Of six cases examined during the six winter months, the substance of the heart was flabby in only one; of eight examined during the summer months, it was flabby in four.

Dusky-red Staining of the Lining Membrane of the Heart.—No note with reference to this particular was made in seven of the cases; in five cases it was unstained; in one there was slight discolouration of the endocardium of the left auricle, and in two cases there was slight staining of the whole endocardium; so that in one-fifth only of the cases was the endocardium observed to be stained, and in these cases the description of the staining was qualified by the terms—slightly, slightly, and a little.

Condition of the Blood in the Heart.—Of fifteen cases eligible for analysis, no note was made in one. In four, examined respectively 58, 36, 22½, and 7 hours after death, the blood was fluid; in the last, however, it coagulated shortly after its escape from the body; and there was already formed a minute clot in the right ventricle.

There was a large clot, made up of a larger or smaller smooth, shining, yellow, fibrinous portion, from the substance of which much serosity could be pressed, and of a large, loose, dark crimson, almost black clot, joined to and lying beneath the former, in the right auricle and ventricle in ten cases; in all of these cases there was also a similar but smaller clot on the left side; and in seven of the ten cases, the fibrinous portion of the coagulum on either side of the heart was continuous with a clot in the pulmonary artery and aorta; and in several of these ten cases it was moulded at the lower portion to the shape of the upper surface of the sigmoid valves.

In four cases the blood was fluid in the venæ cavæ and pulmonary veins, while it was tolerably firmly, or decidedly firmly, coagulated in the right side of the heart.

In two of the three cases in which the blood was fluid in the heart, and did not coagulate after its escape from the body, the substance of the heart was flabby; in two other cases, in which a similar condition of that organ existed, the blood was firmly coagulated; and in five cases, in which it was firm, a firm coagulum was found in the right and left cavities of the organ.

Typhus Fever.—Eight cases either survived beyond the 29th day of the disease, or the chests were not examined.

Excluding six cases, the hearts of which were examined respectively 11, 20, 27¼, 36, 45½, and 48 hours after death, because no note with reference to their consistence was made, there remain for ana-

lysis twenty-nine cases; in fifteen of these the heart was flabby, in fourteen firm.

Of five hearts examined 20 hours or less after death, one only was flabby; of fourteen examined between 20 and 30 hours after death, four, or more than a fourth, were flabby; while the whole of those, *i. e.*, nine, examined more than 30 hours after death, were in that condition. While, as I have said, above two-thirds of the hearts examined more than 30 hours after death from typhoid fever, were firm or of natural consistence; or if, as is highly probably, those hearts of which no note was made were firm, then it will be seen that four-fifths of the hearts of the subjects dead from typhoid fever, which were examined more than thirty hours after death, were firm; while one-fourth only of the hearts of the subjects dead from typhus fever, which were examined more than 30 hours after death, were firm.

The day of the disease on which those cases proved fatal in which the heart was flabby, varied from the 9th to the 23d day; a large majority of these patients died by the 16th day. The day of the disease on which those cases in which the heart was firm expired, varied from the 11th to the 22d day; the large majority proved fatal by the 15th day, so that the duration of the disease could have had no material influence in producing the flabby condition of the heart. As I have shown above, the duration of the disease had a marked influence over the condition of the heart, with reference to the point we are considering, in the cases of typhoid fever.

Age had very little influence in modifying the consistence of the organ in typhus fever, for the average age of the group in which the heart was flabby, was 44; of that in which it was firm, 47; in the latter group, there were six cases under 50 years of age; in the former, nine under the same age.

The external temperature, like the age of the patient, exerted little influence in modifying the consistence of the heart in the cases here considered; for of eleven hearts examined during the six winter months, four were flabby and seven firm; and of twenty-two inspected during the summer six months, nine were flabby and thirteen firm.

So that it seems probable that, in the cases of typhoid fever, the flabby condition of the heart was due to two causes,—1st, a tendency imprinted on the muscular tissue by the disease when death occurred within 25 days from its outset; and, 2dly, the external temperature. While in the cases of typhus fever here considered, although the latter cause might have had some influence, the principal, and by far the most active cause, must have been the impression produced on the heart by the disease itself. These opinions are still further strengthened by the fact, that so many cases of typhus fever prove fatal from the intensity of the general affection, and not from the supervention of local lesions, and that at all stages, even the most advanced, of the disease (*i. e.*, excluding cases fatal after the 4th

week).   Now it is at the earlier periods of typhoid fever only that
the state of the system at large produces death.   Thus an explana-
tion is afforded of the fact, that the duration of the disease had a
marked influence in the production of the altered consistence of the
heart in typhoid, and not in typhus, fever; the *difference* in the in-
fluence of the temperature in the two affections was probably more
apparent than real, because the tendency to produce the flabby state
of the heart in typhus fever was so great, that the influence of the
weather could scarcely be observed.

Dusky-red Staining of the Lining Membrane of the Heart was ob-
served in twelve cases.   In eight of the twelve both sides of the heart
were stained; but in four of the eight the right side was darker than
the left, and in one only was the left side darker than the right; in
three cases the staining was confined to the right side.   There was
no discolouration of the endocardium in twelve cases; no note was
made in eleven cases; so that about one-third, or eleven out of thirty-
six, had the lining membrane of the heart discoloured; or if we ex-
cept from the calculation those of which no note on the point was
made, one-half would be thus affected, while, as I have shown, of
the cases of typhoid fever one-sixth only, or rather two-thirteenths;
or if I omit from the calculation the cases of which no note on the
point was made, one-fourth only had the endocardium discoloured.
It will be observed by the reader, that whichever calculation be used,
the relative proportion is the same, and therefore, for the purpose
for which these cases are here analyzed, it is a matter of indifference
which of the two be adopted.

In every case, save one, the substance of the heart was flabby at
the same time that its lining membrane was stained.   The subject
which formed the exception—a man, æt. forty, who died about
28 days after the commencement of the disease—was examined in
the month of November, 22 hours after death.

In every case, excepting two, in which the endocardium was
noted to be unstained, the substance of the heart was firm; these
two cases were examined respectively 42 and 48 hours after
death.

If the staining be viewed with reference to the date after death at
which the cases were examined, the average number of hours which
had elapsed from the hour of death till the subject was placed on the
dead-house table, was, for the unstained, 24·7 hours—for the stained,
32·7 hours; two-thirds of the latter group were examined more than
30 hours after death; one-sixth only of the former more than 30
hours after the patients expired.   So that the staining of the endo-
cardium, and the flabby condition of the heart, depended apparently
on the same causes.

Conditions of the Blood.—It was fluid in four cases; fluid, but
mixed with a few loose black clots, in four others; these eight cases
proved fatal on the 14th, 13th, 17th, 20th, 16th, 13th, 15th, and 17th

days of the disease; and were examined respectively 16, 27¼, 21½, 27, 22, 24, 45½, and 20 hours after death.

The blood was fluid in the left side only of the heart in six cases; in two of these six there was a small dark coagulum ; in two a large, loose, soft, black, and small fibrinous clot; in the fifth, a large, very loose, black clot, and much fluid blood ; and in the sixth, a large, soft, pale yellow and black clot in the right side of the heart.

In one other case, there was a small black clot in the right side of the heart, while the left was empty.

In two cases there was a large, loose, black clot in the right side; in one of these two the left side of the organ was empty, and in the other contained a small black clot.

A small fibrinous clot only was found in two instances on the right side of the heart, and in both these there was a small black coagulum found on the left.

A large fibrinous clot, with much fluid blood, occupied the right cavities of the heart in four cases, and in these four the blood was found in a similar condition on the left side, but in smaller quantity.

In three cases a large, loose, fibrinous clot, and much dark fluid blood, filled the right auricle and ventricle, and a small fibrous clot lay in the left side.

In seven cases a large, loose, fibrinous, and black clot filled the right auricle and ventricle ; in one of the two the left side of the heart was empty ; in five it contained a small black, or black and fibrinous, coagulum.

In the remaining four of the cases of typhus fever in which the condition of the blood after death was noted, a firm, yellow, fibrinous and black coagulum filled both the right and left sides of the heart; two of these four cases proved fatal at an uncertain period, but before the 21st day of the disease ; the other two respectively on the 16th and 17th day of the disease. The age of these patients was between 32 and 45 years. The two cases in which the coagulum was the densest and largest, were complicated with extensive lobar pneumonia, and one of the two with erysipelas.

The blood was fluid, or nearly so, in the aorta and pulmonary artery in nine cases, and in all these nine cases it was also fluid in the venæ cavæ and pulmonary veins ; it was fluid in the veins in three other cases, in which its condition in the arteries was not noted.

In thirteen cases there was a clot of some size, fibrinous and black, in the pulmonary artery and aorta ; in three of these thirteen cases it was fluid in the pulmonary veins and venæ cavæ ; and in four others of the thirteen the latter contained loose black coagula.

In the same subjects the clot was firm and the heart flabby in three cases. The clot was firm, and the substance of the heart firm, in six cases.

The clot loose and the heart flabby in five cases; the clot loose, and the substance of the heart firm, in nine cases.

So that in these twenty-three cases there was no constant relation between the condition of the blood and that of the heart.

The fluid condition of the blood generally, was observed in about equal proportion in the subjects dead from typhoid and typhus fevers, but with those exceptions there was a marked difference in the blood in the two diseases; it was far more profoundly diseased, *i. e.*, it deviated far more from its healthy condition, in the cases of typhus, than in those of typhoid fever.

LUNGS.

Typhoid Fever.—Eight cases either survived the thirty-fifth day of illness, or I was not permitted to examine their chests.

The lungs in one of the remaining fifteen cases were healthy in all particulars; this case proved fatal on the 25th day of disease, from hemorrhage from the intestines; there had been little or no heat of skin during life, and the pulse never exceeded 90; the general symptoms had been trifling. In another case there was only some mottled congestion of both lungs. Of this case I speak with hesitation—in truth, I think it ought probably to be arranged under the head of non-granular lobular consolidation, a condition with which, at the time I made the examination, I was but imperfectly acquainted, and which, consequently, I might have described by the term mottled congestion. In a third case, the only deviation from health was a considerable quantity of almost colourless frothy serosity in the apex of the right lung.

In all of the remaining twelve cases, there was more or less extensive consolidation of the pulmonary tissue.

These twelve cases may be thus grouped:—

1st, Five cases of non-granular lobular consolidation, distinctly circumscribed by interlobular septa. In one of the five, this condition was conjoined with granular lobar consolidation. In four of the five cases consolidated patches existed in both lungs. In neither of them, however, were both lungs equally affected. In the fifth case the left lung only was diseased.

2d, One case of non-granular consolidation, in separate patches, not bounded by interlobular septa; in this case portions of the pulmonary tissue, cut from the substance of the lung adjacent to the consolidated portions, sunk in water, if slightly pressed before immersion. Both lungs were nearly equally affected.

3d, Two cases of granular consolidation, in well-defined patches; whether these solidified portions were bounded by interlobular septa or not, was only imperfectly made out. In one of these cases the disease was limited to the left lung; in the other both lungs were affected; in the right, however, there was extensive lobar granular consolidation; in the left, lobular and lobar solidification.

4th, Two cases of granular consolidation, in distinct but not well-defined patches. In one of these two cases, the disease was double;

in the other the right lung was affected with lobular, the left with lobar, consolidation.

5th, Two cases in which a state intermediate between the non-granular and the granular consolidation was exhibited. In one of the two the disease was double; in the other, limited to the left lung.

Physical Characters of Lobular Non-granular Consolidation.— Externally, a portion of lung in this condition has a mottled aspect, here and there are patches, varying in size from a single lobule to half or more of a lobe, of a deep bluish, chocolate, violet, or purplish slate colour, bounded by a well-defined angular margin, crossed, if it includes more than one or two lobules,—and mapped out into smaller patches, by dull opaque whitish lines. On closer inspection, the outline, and the whitish lines intersecting the patches, are seen to be thickened interlobular septa. Scattered in the midst of the larger patches, are frequently found one or more comparatively healthy lobules, of a pale brightish pink colour, contrasting strongly with the hue of the surrounding tissue. Here and there, near the bor-der of the large patches, may be seen, occasionally, lobules, the *centres* of which have assumed the dusky purplish tint ; the *circumference* of the same lobules yet retaining their healthy colour. The dark patches feel solid and flabby ; the pulmonary tissue, at these spots, has lost the resiliency of health. The pleura covering the lung either re-tains its natural appearance, or has a slightly milky aspect.

On section, the tissue corresponding to the dark patches, is found to be of a deep purplish chocolate colour, gorged with non-aerated bloody-looking fluid, breaks down with little or no increased facility, nay, sometimes appears tougher, than in health ; has a uniform or nearly uniform section, *i.e.*, there is no appearance of granules, such as are seen in the consolidated state of so-called vesicular pneumonia ; sinks in water, like the patches seen externally ; is bounded by inter-lobular septa ; but these divisions, between the consolidated and non-consolidated tissues are less marked, especially the most superficial tier, so to speak, of lobules. [1]

A minute portion can be cut from the middle of a lobule—the centre of which is dusky purple, and the circumference brightish

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[1] I have proved, by injecting the lung in this non-granular consolidated state, common to all acute diseases of determinate duration, dependent for their origin on a specific cause, and accompanied by febrile excitement, as measles, scarlet fever, small-pox, typhoid and typhus fevers, that occasionally the centre of the lobule is really the point at which the diseased action is first set up ; but then it is doubtful how far this, in the cases referred to, was dependent on an inflamma-tory condition of the bronchial tubes, extending downwards to their termina-tion in the vesicular tissue of the lobules. The question can only be answered by an analysis of numerous cases, in which all the possible determining cir-cumstances, *i.e.*, the co-existence of bronchial inflammation, &c. &c., are consi-dered at full. There was no trace in these cases of the bronchial fibrinous plugs, described by some writers as invariably found in catarrhal pneumonia.

pink—which sinks in water; equally small pieces of pulmonary tissue, taken from the circumference of the same lobule, float.

The following account of the superior lobe of the right lung of a girl, æt. 15, who died on the twelfth day of disease, illustrates some points in the above description:—

Its posterior part had a mottled aspect; the darker portions being of a purplish slate and violet colour; the lighter of a pinkish violet. The septa between the lobules was well marked, white and opaque. The mottling was found, on close inspection, to depend on the difference in colour of the lobules. Some were dark throughout; the dark colour terminating abruptly at the interlobular septa. At places several of these dark lobules were in contact, forming a deep-coloured patch, crossed by the white septa. Some of the lobules, here and there, were pale, but the centres of some of those which were generally pale, were dark; the size of this dusky central spot varied in different lobules, as if the non-granular consolidation had commenced in the centre, and then spread till it involved the whole lobule. The pulmonary pleura had a slightly milky aspect. On section, the distinction between the lobules was well marked, and the difference in their colour almost as much so as on the surface. The paler lobules were crepitant, floated in water, and possessed their normal consistence. Some of the darker contained a little air, others none; they sank in water, and broke down with facility under pressure. Parts of the middle and inferior lobes of the same lung were in a state of red, and parts of grey hepatization. The superior lobe of the opposite lung was natural in colour and consistence. The inferior lobe, natural in appearance anteriorly, was mottled *posteriorly;* the darker parts being non-crepitant, the bright red crepitant. The bronchial tubes of both lungs contained much frothy mucus; their lining membrane was bright red; its consistence and thickness were considered natural.

The following description of the lungs of a girl, æt. 16, offers an example of non-granular lobular consolidation, uncomplicated with the granular form. As in the last, the bronchial mucous membrane was the seat of increased vascularity; but the bronchial symptoms, during life, had not been prominent. The left lung weighed 16 oz.; was of a dark pinkish violet; externally scarcely darker posteriorly than anteriorly. Over the whole surface were scattered various sized patches, of a deep purplish colour, from base to apex; the majority distinctly bounded by interlobular septa. The number of lobules in each patch varied from one to eight or ten; some of the darker lobules were situated near the anterior margin of the lung. On section, the darkest coloured patches, seen externally, were saturated with bloody fluid, non-crepitant, sank in water, and had a uniform or nearly uniform section. The somewhat less dark coloured patches contained much bloody fluid, but little air, yet floated in water. The whole lung, on section, was darker than natural, and the interlobular septa particularly distinct. It contained a considerable quantity of

frothy serosity, but scarcely more posteriorly than anteriorly. The right lung in the same subject weighed 21¾ oz.; was gorged with reddish frothy serosity; felt rather more solid than natural, but every part floated in water. The bronchial mucous membrane in both lungs was intensely injected, of a dusky red colour; the redness being in streaks, punctæ, and patches. The bronchial tubes were filled with thin frothy mucus. In the case in which the non-granular consolidated portions of lung were not circumscribed, but passed imperceptibly into the crepitant tissue, the posterior part of the lung only was affected; and the still crepitant tissue was gorged with bloody serosity, and broke down with abnormal facility—both lungs were equally affected.

Granular Lobular Consolidation.—The physical appearances presented by the lobules thus affected, characteristic, as they are, of the second stage of pneumonia, are too well known to require description.

The following, offering an example of the well-defined lobular granular consolidation, was the condition of the superior lobe of the left lung of a man, æt. 28, who died on the 27th day of disease. In its substance were two or three masses, the size of filberts, firm to touch; on section, of a deep red colour, friable, distinctly granular, readily breaking down under pressure; the line of demarcation between the crepitant and consolidated tissue was well marked and defined. The inferior lobe of the same lung presented the following appearance:—A small portion overlapping the heart was pale and crepitant; the most inferior and posterior portion of the same lobe felt solid; contained no air; was very friable; had a granular fracture; of a pale red colour; sank in water; and, on pressure, gave exit to an opaque bloody muco-purulent fluid. The intermediate portion of this lobe was *non*-granular; of a deep purple colour; sank in water; contained no air; on pressure, gave exit to a bloody-looking fluid (very different in appearance from the pale, dirty, red muco-purulent fluid above described).

The transition from the one to the other of the three above described pathological conditions, was at some places gradual, at others abrupt and well defined. The right lung weighed 2 lb. 4 oz.; its inferior lobe resembling the corresponding part of the left lung, but a much larger portion, more than half, was in a state of granular consolidation.

Of the granular non-circumscribed form of lobular consolidation, the following account of the inferior lobe of the right lung of a man, æt. 23, who died on the 20th day of disease, presents an example. Near the base of the lobe were two or three masses of consolidated tissue, of a dark colour, which sank in water, and readily broke down under pressure. Their cut surface was granular; the tissue between tough and crepitant, as in its normal condition.

The following particulars of the lungs of a female, aged 32,

who died on the 34th day of disease, exhibit a condition of the pulmonary tissue, which appears intermediate between the non-granular and the granular consolidation.

The right lung weighed 15¼ oz.; was crepitant throughout; felt more solid behind than before; was of a dirty red colour; and floated in water when cut in pieces. The left lung weighed 15½ oz. (*i.e.* was comparatively heavy); its most depending portion (the subject being on its back) felt solid, contained little air, sank in water, broke down readily under pressure, but had not the appearance of solidified lung in the second stage of either the so-called vesicular or intervesicular pneumonia.

Lobar granular consolidation was, in three instances, conjoined with the foregoing conditions; *i. e.*, in one of the three cases with abruptly defined lobular granular consolidation; in one with granular consolidation, the outline of which was not abruptly defined; and in the third it was conjoined with circumscribed *non*-granular consolidation.

Typhus Fever.—Thirty-five cases are eligible for analysis. In two of these thirty-five the lungs were healthy in all particulars. In a third case, the posterior congestion was so slight, that it could scarcely be considered a deviation from health. The remaining thirty-two cases may be thus grouped.

1st, Three cases of simple congestion of the posterior part of the lungs. In two of the three, both lungs were equally affected; in one the left lung was more congested than the right.

2d, Three cases of congestion of the posterior part of the lungs, with diminished consistence of the congested parts. In one of the three, both lungs were equally affected; in another, the right was more deeply diseased than the left; in the third, the left lung only was in this condition, the posterior part of the right being simply congested.

3d, Eleven cases of congestion of the posterior part of the lung, with non-granular consolidation of the most depending (the subject being on its back) layer of pulmonary tissue. Both lungs were affected in five of the ten cases; but, in two of the five, one lung was more extensively solidified than the opposite. In six cases one lung only was thus diseased. In one case only was there any attempt at circumscription.

4th, In four cases, the most obvious departure from a normal condition, was a great excess of almost colourless serosity in some portion of the pulmonary tissue. In one of the four there was marked congestion, with diminished consistence of the most depending part of both lungs, the right being more affected than the left; the most congested portions contained the greatest amount of serosity. In a second, there was simple congestion of the most depending part of the lungs, with great excess of serosity in the superior lobes. In another case, in which there was moderate congestion of the most depending part of the left lung, there was little serosity in the in-

ferior lobe, while the upper half of the superior lobe, anterior as well as posterior part, was saturated with frothy serosity. The right lung, in the same subject, was more congested posteriorly; in the same part of both lobes the excess of serosity was great; but the apex contained more than the other parts. While, in the fourth case, the excess of serosity was limited to the apex of the right lung, from which it flowed, as if from a sponge saturated with moisture. There was no congestion of the vessels of the superior lobe in this case.

5th, In eight cases there was lobular consolidation. In two of the eight, the consolidation was non-granular and abruptly defined. In one of the two it was limited to the left lung; in the other it affected both lungs. In two there was a similar form of solidification; but the line of demarcation between the crepitant and non-crepitant tissues was only marked at places,—in one the right, in the other the left lung, only was affected. In two of the eight, granular and non-granular consolidation of the pulmonary tissue was present in the same subject. There was no distinct line separating the solidified from the crepitant tissue in these two cases,—in one of them, both lungs were nearly equally affected. The solidified masses in this case appeared to be in a state intermediate between the granular and non-granular consolidation; in the other, granular lobar solidification was present in both lungs. In the remaining two of the eight cases of lobular consolidation, the diseased lobules were granular; in one central, occupying the left lung only; in the other confined to the left lung, while the right, in the same subject, was affected with lobar granular consolidation.

6th, Lobar granular consolidation of the upper portion of the inferior lobe of either lung, existed, uncomplicated with the lobular form, in one case.

In one of the last referred to cases, there was commencing gangrene of the pulmonary tissue; and, in another case, not included in the thirty-five, there was well-marked circumscribed gangrene. The latter occurred in a boy æt. 8 years, who died on 22d day of disease. In this same boy a portion of the cornea of both eyes sloughed out before death. The right lung presented the following appearance: It was closely collapsed; in the pleura were about 3 oz. of purulent fluid, possessing a highly-offensive odour. From the centre of the closely collapsed superior lobe projected a mass, which felt about the size of a pigeon's egg, one half of which, however, was buried in the pulmonary substance. The smoothness of the projecting mass contrasted strongly with the corrugated appearance of the general external surface of the superior lobe. On cutting through this mass, its centre was found to be occupied by black semi-fluid matter of very offensive odour; stretching across this black pulpy mass were delicate bands of some consistence. This gangrenous mass was about an inch in diameter, and was distinctly bounded by a border of *white* soft pulpy matter, about half a line in thickness. The pulmonary substance surrounding this white line,

for some lines in every direction was softened, of a purplish red colour, contained no air, had a smooth and uniform non-granular section. Externally, this condition of the pulmonary tissue extended to the pleura. From the inferior lobe of the same lung a prominence, similar to that described above, projected. On cutting into it, some offensive gas escaped, and the anterior wall collapsed. The cavity, laid open by the section, contained some dark semi-fluid black matter and gangrenous shreds,—the whole circumscribed by a white line, similar to that described, as bounding the gangrenous mass in the upper lobe. The external wall of the cavity was *very* thin, and on the pleural surface was a black spot about the size of a split pea, with well defined outline. In the vicinity of the above were two smaller masses, closely resembling the last described.

It is unnecessary to repeat the descriptions of granular and non-granular lobular consolidation; but, as congestion of the posterior portion of the lung, with non-granular consolidation of the most depending part of the organ, did not present itself among the cases of typhoid fever, it is necessary to describe the appearances exhibited by lungs in that condition. The posterior portion of the lung, in the cases included under this head, was congested, and its consistence diminished; the most depending layer of pulmonary tissue (the subject being on its back), which extended, in different cases from a quarter of an inch to two inches into the substance of the lung, was solidified, very dark bluish chocolate in colour, gorged with non-aerated dark claret serosity, which flowed freely from the cut surface; it was scarcely softened; the whole of the solidified layer sank in water. The consolidation did not, unless it extended far into the pulmonary substance, affect the extreme base, the apex of the inferior lobe, nor the root of the lung, *i.e.*, that portion which is immediately in contact with the vertebral column, but was limited to the part of the organ which lies in the hollow formed by about the 4th, 5th, and 6th ribs, as they curve backwards, outwards, and forwards, from the bodies of the dorsal vertebræ. The solidified and crepitant tissue passed, imperceptibly, the one into the other. The transition from the pale anterior portion of the lung to the congested posterior, and from that to the most depending solidified tissue, was in the greater number of cases gradual, and not abrupt, as in the circumscribed non-granular lobular consolidation. As was stated (p. 19), only one lung, in six of the cases grouped under this head, was affected; therefore, although position was the determining cause, some other agent was concerned in the production of this morbid condition—a condition by no means peculiar to fever.

In order to exhibit the difference observed in the lungs of the subjects dead from typhoid and typhus fever, it will be necessary to sum up the particulars detailed in the preceding analysis.

In thirty-four cases of typhus fever, there were four examples of granular consolidation, *i. e.*, nearly one-ninth of the whole.

In fifteen cases of typhoid fever, there were four cases of granular consolidation, *i. e.*, about one-fourth.

Three cases of lobular non-granular congestion in the thirty-four cases of typhus fever, *i. e.*, about one-twelfth, while six, or three-fifths, of the cases of typhoid fever, exhibited the same lesion.

Congestion with consolidation, evidently determined by position, was present in nearly one-third of the cases of typhus fever, and in no single instance of typhoid fever.

The comparative frequency of the granular and of lobular non-granular consolidation in the cases of typhoid fever, is too marked to be the result of accident. It is evidently a feature impressed on the pulmonary organs by the disease itself, as will be more evident on examining the conditions of the pleura in the two diseases.

It is also worthy of remark, that in no case of typhoid fever was gangrene of the lung present, while it occurred in two cases of typhus. The occurrence of six cases of congestion of the posterior portion of the lung, with or without diminished consistence, is also a distinctive feature; for, be it remembered, the one class of patients had been confined to bed as long as the other,—nay, the cases of typhoid fever proved fatal at a later period of disease.

BRONCHIAL TUBES.

Typhoid Fever.—Notes respecting the condition of the bronchial tubes, were made only in twelve of the cases included among those here analyzed.

In four of the twelve the lining membrane was pale in colour; in the remaining two-thirds it was vividly injected, or *bright* red.

Typhus Fever.—The condition of the bronchial tubes was noted in twenty-two cases.

In two cases they were pale in colour; in two slightly congested; in eighteen they were noted to be more or less deeply congested, or *dusky* red.

PLEURÆ.

Typhoid Fever.—Of those cases which proved fatal before the 35th day of disease, the chest was examined in fifteen.

There were present unequivocal signs of recent inflammation of the pleura in six cases, *i. e.*, in the proportion of 40 per cent. These signs were recent adhesions, or the effusion of lymph.

Typhus Fever.—Thirty-six cases are eligible for analysis. In three of these cases there were signs of recent inflammation of the pleura; but in one of the three the lesion consisted in the presence of pus in the cavity of the pleura, secondary to gangrene of the lung. In two cases only was there any recent lymph, and in one of these it was merely sufficient to render the serosity turbid, and in the other to cause trifling adhesions. Thus, if these three cases be considered as cases of recent inflammation, pleuritis only occurred in the proportion of 8·3 per cent.; while, if the two latter only are con-

sidered, but in the proportion of 5·5 per cent. It has been just shown, that 40 per cent. of the subjects dead from typhoid fever exhibited unequivocal signs of recent inflammation of the pleura.

(*To be continued.*)

ARTICLE IV.—*Case of Hydatid Tumour of the Liver and Right Kidney.* With Remarks. By T. P. HESLOP, M.D, Resident Medical Officer of the General Hospital, Birmingham.

JOHN BEAUMONT, æt. 49, married, a brick-burner, was admitted, December 1, 1849, into the General Hospital, Birmingham, under the care of Dr Eccles, by whose permission I am enabled to put this interesting case upon record.[1] A man with blue eyes, fair complexion, and of sanguine temperament, states he has generally enjoyed good health, with the exception of the tumour for which he has entered the hospital. Twenty-three years ago, had an attack of typhus fever, from which he considered he had a perfect convalescence, but two years afterwards first noticed a slight enlargement at the upper part of the abdomen. This rapidly increased, and though, for the most part, unattended with pain, caused frequent copious vomiting of a slightly greenish fluid. After about three years, its growth produced such constant uneasiness, from pressure upon the stomach and other viscera, that he determined—to use his own expression —upon bursting the tumour. This, he supposes, he effected by violently pressing his belly against a vice, which was followed for three days by vomiting of an extraordinary quantity of a clear fluid. He expresses himself as having been much relieved by this rude operation, and believes that the tumour very much diminished. He was able, subsequently, to follow his arduous employment with greater ease, though still subject to occasional attacks of pain. The tumour, however, gradually augmented in size from that period to the present date. Never had had jaundice. Present symptoms—tongue clean ; pulse 76, full ; appetite good ; no cough ; chest and heart-sounds healthy; countenance of a slightly yellowish tint ; complains of sense of fulness, and frequent pain over the upper portion of the abdomen ; every few days has copious vomiting. On examination, a prominent tumour is found occupying the right hypochondrium, and extending across the epigastric region, to the left hypochondrium, its greatest prominence being midway between the ensiform cartilage and the umbilicus, a little to the left of the mesial line. There is absolute dulness on percussion over the seat of this swelling, extending from the right nipple above, nearly to the umbilicus below—externally and inferiorly the dulness extends further, and is better marked on the left than the right side. The limits of the tumour are well defined, excepting towards the outer border of the right hypochondrium—in fact, everywhere else, the edge of the tumour can be distinctly felt. To the touch, the tumour is firm, elastic, and conveys the impression of being slightly nodulated. Careful manipulation detects deep, obscure fluctuation. The veins on its surface, and over the whole abdomen, are distended. Those, also, of the lower extremities, are distended and varicose. The bowels being confined, he was ordered an aloetic purgative. Iodine frictions were employed, and he took iodide of potassium and bark. After two months, he left the hospital unrelieved.

April 10.—This man again applied for admission, for the purpose of seeing *whether any surgical interference, for which he expressed a strong desire, would be beneficial to him.*

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[1] I must express my thanks to Mr Alfred Freer, for an important portion of the notes of the case.

The tumour was found to have grown considerably ; vomiting was still frequent and distressing ; all movements of the trunk, particularly stooping, produced great pain ; his countenance bore an anxious aspect, and he had become much thinner. The arched space between the left lower ribs, the ensiform cartilage, and the middle line, was completely filled by the tumour, over which fluctuation was slightly more evident than on his first admission. Its transverse measurement was eight inches. He was sensible of a certain amount of *rolling* of the swelling on making a change of posture. Urine, light amber coloured, and non-albuminous. Sp. gr., 1020.

After a residence of several weeks in the hospital, it was determined, in consultation, to introduce an exploratory trochar into the most prominent portion of the tumour, and the operation was performed on the 23d of May, by Mr Crompton. There flowed through the canula eight drachms of limpid fluid, of a feebly alkaline reaction, in which nothing characteristic of hydatids was found upon microscopic examination. The trochar was pushed inwards between two and three inches before the fluid was reached.

May 24.—Slept well ; pulse quiet ; tongue clean. No appearance of inflammation around the wound—ordered some effervescing medicine, and a dose of calomel. Ten leeches, followed by cataplasms, were applied to the epigastrium.

During the next few days, considerable tenderness arose in the upper part of the abdomen, attended with general febrile excitement. The calomel was repeated every four hours, and a small number of leeches were from time to time applied. The mouth became very sore, and, though the pain was somewhat diminished, he had constant attacks of vomiting. On the 27th, the urine was observed to be slightly coagulable.

June 21.—Has daily vomiting of clear fluid in large quantity. The tumour is enlarging, particularly towards its left extremity. The mouth is well. Bowels require frequent purgatives.

June 27.—Fluctuation has become more obvious, but he has had no rigors. Tongue clean ; complete want of appetite. He is much emaciated, and the countenance wears an extremely anxious aspect.

July 4.—Vomiting of a dark greenish fluid is almost constant ; complains of intolerable oppression about the upper part of the abdomen ; great thirst ; pulse extremely weak ; general prostration. There being great tension of the left portion of the tumour, it was determined to introduce a large trochar, which was done by Mr Crompton. A small quantity of pus immediately flowed through the canula, followed by many broken-up hydatids. Some of these were of the size of a walnut. An elastic tube was introduced to keep the orifice patulous ; it being deemed advisable to delay the further opening of the tumour until he had rallied a little. Profound prostration, with delirium, came on next day, and on the 8th he died. It should have been stated, that, about a fortnight before the second puncture, dulness and general fulness were observed in the right lumbar region ; on placing one hand on this region, and the other on the front of the right side of the abdomen, it was easy to detect the presence of a tumour, entirely distinct from the hepatic swelling. Several weeks previously, Mr Crompton had detected certain irregularities of the lower portion of the abdomen, which he considered to arise from tumours distinct from that in its upper region ; but, at this time, no suspicion was entertained of any renal complication.

Autopsy, twenty hours after death.—Body extremely emaciated—upper part of the abdomen prominent.

Brain.—Dura mater unusually adherent to the cranium. Superficial vessels of the hemispheres turgid. The arachnoid membrane slightly opaque. The coats of the left vertebral and internal carotid arteries, contained considerable atheromatous deposits.

Thorax.—Lungs congested at their bases. Heart healthy,—its weight, nine ounces. The capacity of the thorax diminished from upward pressure of the diaphragm.

Abdomen.—On opening this cavity, a large tumour was observed filling its upper portion, below which the distended intestines alone came to view ; but upon raising them, another swelling of almost equal dimensions, and apparently connected with the former, was seen. The first-named tumour adhered firmly at its centre to the parietes; these adhesions surrounding the opening made by the trochar. It was connected exclusively with the left lobe of the liver, and chiefly with its under surface, below the border of which it protruded. Both lobes of the liver were flattened and adherent to a considerable extent to the abdominal walls, but were entirely unconnected with the stomach and colon. The great omentum, thickened and contracted, adhered to its lower border. The liver measured thirteen inches from side to side, the left lobe ten inches from above downwards, the right a little more than nine inches. The transverse measurement of right and left lobes equal. The whole contents of the cavity were taken out, when the great size of the other tumour already named was fully exposed to view. It occupied the whole right lumbar region, and extended behind the right lobe of the liver nearly to the diaphragm. Anteriorly it was completely covered by the intestines. Upon careful dissection it was observed to be most closely adherent to the inferior transverse portion of the duodenum and to the pancreas, but, with the exception of a few cellular bands, was altogether distinct from the hepatic tumour. Upon laying it open, it was found to be a mass of cysts in the substance of the right kidney, one of which contained nearly a quart of clear fluid mixed with hydatids, varying in size from that of a small orange to that of a pea. At the lower portion of the organ the renal structure was uninvaded by the cyst-growth. The kidney, with its morbid appendages (emptied of their contents), weighed one pound seven ounces. The hepatic tumour was now opened, and found to be one immense cyst, containing hydatids, for the most part collapsed, and nearly a pint of pus, with a little thick pultaceous matter. When emptied, it measured six inches in diameter. Its walls were about four lines in thickness, completely inelastic, and covered with a brittle deposit, precisely like the atheroma of diseased arteries. The gall-bladder was stretched out to nearly double its normal length on the right border of the cyst ; but no obstruction existed to the passage of the bile through the ductus communis. No other cyst existed in the liver, whose structure was healthy even up to the walls of the morbid growth ; weight four pounds, the cyst having been previously emptied. The spleen somewhat firmer than usual ; weight seven ounces. The left kidney very vascular ; some minute cysts existed on its surface. The cortical structure coarse ; weight eight ounces. Upon microscopic examination, the tubuli were observed to be singularly hypertrophied and varicose. Prostate gland enlarged.

Remarks.—Two successful cases of operation in hydatid tumour of the liver have been recently reported by Dr Owen Rees.[1] The facts adduced by that able physician have turned the attention of the profession to an operation, which, upon the whole, has certainly not found much favour lately in their eyes, notwithstanding the great success of Rècamier and Graves but a few years back. There is a general feeling against surgical interference with abdominal tumours—based, I presume, upon the opinion of their generally doubtful diagnosis. The history of this case—the great length of time (twenty-one years) that elapsed from its first origin—the absence, throughout that period, of jaundice—the freedom from severe pain—the want of the *malignant aspect*—the local characters of the tumour, in refer-

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[1] See London Medical Gazette, New Series, vol. viii.; and last volume of Guy's Hospital Reports.

ence, especially, to its obscure fluctuation and accurate limitation to the liver, left no room for reasonable doubt that it was a case of hydatid tumour of that organ. The want of the "peculiar thrill" conveyed to the hand, spoken of by Dr Rees, or the "trembling" mentioned by Rècamier, could not suggest a doubt of its real nature, inasmuch as these must ever depend upon the relations of the cyst to the parietes and the surrounding organs. And it is interesting to remark, that the post-mortem examination supplied a ready explanation of the absence of these phenomena. It will be remembered that almost the whole of the cyst was overlapped by the flattened but healthy left lobe of the liver, and was in contact, over a small portion only of its surface, with the abdominal wall. The obscure fluctuation that was actually perceived, though valuable as an additional ground for the diagnosis (the history of the case rendering it certain that it could not be caused by pus), was of small account in comparison with the other facts. The diagnosis, then, being pretty certainly made out, if the desire of the patient himself to have the tumour operated upon—his complete incapacity for labour—the gradual but decisive disturbance of vital organs—the progressive emaciation—above all, the known tendency of hydatid growths of the liver to a fatal termination in an overwhelming majority of cases —be considered, we can have no doubt that an operation was called for. That it was at last unsuccessful, was probably owing to the delay of the complete evacuation of the cyst, a measure which I cannot but consider, upon mature reflection, to be indispensable, whenever surgical interference is determined upon. It is here worthy of remark, that the first fluid obtained from the cyst did not contain any of the hooked processes characteristic of the echinoccoci ; the absence of these, therefore, need not embarrass the diagnosis. I have thought it better to offer these few observations upon the general merits of the operation, excluding altogether consideration of the renal tumour, for such is obviously the fairest mode of dealing with a surgical procedure, which has much to recommend it, but which persons, who are ignorant of the possible precision of *medical* diagnosis, are somewhat inclined to scorn. But it must be now fairly stated, that, granting the knowledge of the existence of this complication, it would not have been justifiable to recommend the exploration of the tumour ; and my principal reason for putting the details of this case upon record, is to draw the attention of the physician to the importance of the discrimination of a second cyst growth. It is sufficiently obvious that the evacuation of a hepatic cyst will not affect the progress of a renal cyst; and as there is unquestionable risk in any operation involving the peritonæum, we are bound to leave the patient to the natural termination of the disease. Supposing the patient had survived the evacuation of the cyst in the liver—the only cyst, be it remembered—is it probable that the renal hydatids would have passed through the duodenum ? This case furnishes an example of those difficulties of diagnosis when more

than one tumour exists in the abdominal cavity, which have been illustrated, I believe, by Dr Bright; but it also illustrates another observation by the same distinguished physician, that, with due care in the manipulation and general physical examination of the abdomen, great accuracy may be obtained even in complex cases. Thus Mr Crompton, it is remarked in the report, at a very early period of the cure, detected certain inequalities at the lower part of the abdomen, far removed from the hepatic tumour. And though the intestines lying in front of the tumour obscured our appreciation of dulness, or other signs of its presence, it is not possible to imagine but that, *posteriorly*, its existence must have been detected, when its great size is taken into consideration, had the idea of the possibility of a renal tumour occupied its due place in our minds. The remarkable prominence of the whole upper half of the abdomen, fluctuation being only perceptible in the extreme left portion of it, might have raised a suspicion that the *right lobe of the liver* was bulged forward by a growth beneath, as was found to be the case.

On the whole, the case gives us good reasons, not for despairing of, but for strenuously attempting, an exact diagnosis of abdominal tumours.

ARTICLE V.—*Description of a New Electro-Magnetic Machine with Single Coil, and Counter-Inductive Tube, for moderating the force of the current.* By THOMAS WRIGHT, M.D., Fellow of the Royal College of Physicians, Edinburgh.

THE object of the present communication is to describe an instrument for the medical application of electricity, which differs from the ordinary electro-magnetic machine, both in its construction, and in the quantity or volume of the current which it is capable of setting in motion.

The common machine consists of a bundle of iron wires surrounded by two concentric cylinders or spiral coils of copper wire, carefully insulated from each other, the wire of the internal cylinder being thick and short, that of the external one very thin, and of great length. The passage of the current from a pair of voltaic plates through the inner coil is attended with a disturbance of the static electricity of the outer one, the wire of which assumes a state of tension or polarity, under the inductive influence of the battery current, and the magnetism of the iron axis. On the interruption of contact between the battery and the internal coil, the electrical equilibrium of the external coil is suddenly restored, and its wire assumes its natural state. The changes thus occurring in the physical state of the external coil, are each accompanied by the passage of a current of electricity along the whole length of its wire, and by connecting its ends with a galvanometer, it is shown that the two currents are equal in quantity,-but passing in opposite directions, so

that the needle remains immoveable when interruption of contact
with the battery is rapidly repeated, the first current exactly neutra-
lising the inductive influence of the second. Although the amplitude
of deflection, produced by the two currents on the galvanometer, is
identical, a considerable difference exists in their physiological action,
—the first, or that occurring on the completion of contact with the
battery, being incapable of causing muscular contraction ; while the
second, which is simultaneous with the interruption of the battery-
current, gives a most violent shock.   This remarkable variation,
which I some time ago illustrated before the Medico-Chirurgical So-
ciety of Edinburgh, was discovered by Professor Henry of America,
but it seems to be altogether unknown to writers on " Medical
Electricity," some of whom have devised complicated instruments
for getting rid of the supposed shock of the first current ; it seems
to be owing to the much greater length of time requisite for the
destruction of the electric equilibrium in the coil-wire, as compared
with that occupied by its restoration. The first being a gradual pro-
cess, similar to the slow retraction of a spring or elastic cord ; the
second instantaneous, as it recoils.   As the two cylinders or coils
have no metallic connection with each other, it is evident that the
currents excited in the external cylinder, are quite distinct from the
current of the battery which passes through the wire of the inner
cylinder only.   The induced current or shock of the external coil is,
in fact, exactly similar to the shock caused by the restoration of the
electric equilibrium between the two coatings of the Leyden jar,
and is entirely different in its physiological effect from the current
of the voltaic battery.[1]
    The current of the battery, while flowing through the internal
coil, throws its wire into the same polarised condition as that of the
external coil, and its interruption is attended with a similar induction
of electricity, evidenced by the appearance of a spark at the disjoined
ends of the wires.   It is generally stated by authors on electro-mag-
netism, that the spark arises from the induced current alone, and is
independent of that from the battery.   I have, however, convinced
myself, that the induced current of the inner coil forces along with
it that of the battery, and that by constituting the battery part of
the circuit of the former current, we can effect a far greater amount
of chemical decomposition than by the agency of the induced current
alone.
    The accompanying diagram (Fig. 1.), shows the mode of com-
bining the induced and battery currents :—
    A is a single Daniel's cell battery, C the coil, A B C D E F
the circuit of the battery and coil ; a small voltameter attached to
the circuit at the points B D, will receive the induced current of
the coil, and but a slender stream of gas will rise from its wires ; if,
however, the attachments of the voltameter are removed to the points

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[1] *Vide* " Monthly Journal," July 1848, p. 22.

E F, it will form part of a cir-
cuit, in which both battery and
coil are included, and a rapid
evolution of gas will indicate
that the battery current is
forced along with the induced
current; the difference is still
more apparent when a cell of
higher intensity, as that of Pro-
fessor Grove, or my platinised
zinc battery,[1] is used.

In my electro-magnetic ma-
chine, I have, therefore, em-
ployed one coil only, which is
formed of a single thick copper
wire, about thirty yards long,
closely wound over a bundle of soft iron wires, seven inches long
and three-sixths of an inch in diameter.   The coil is some-
what similar to those employed by Faraday in his first experi-
ments on magneto-electricity, and is, I find, the form best adapted
for obtaining the highest amount of inductive action between the
coil-wire and the iron.   The shock obtained from this coil is exceed-
ingly powerful, and the quantity or volume of the current very
large as compared with those instruments in which the outer coil is
employed, on account of the much greater diameter of the wire.

In the common electro-magnetic machine, the shock is moderated
by withdrawing the iron axis from the coils, a plan which renders it
impossible to bring the coil-wire and iron into close approximation,
and requires a second magnet for the working of the break-spring;
to obviate these inconveniences, I have had recourse to a contrivance
founded on the fact (discovered by Faraday many years ago, and
afterwards re-discovered by Professor Henry, and by myself,[2] under
different circumstances), that when two or more circuits are coiled
on the same magnet, the complete closure of either of them prevents
the inductive influence of the magnet on the other which is unclosed
or closed by an imperfect conductor; the induced current of the
more perfect circuit tending to counter-induce a current in the less
perfect circuit, in opposition to that induced in it by the battery and
magnet, and exactly neutralising their influence on it.   It occurred
to me, therefore, that the power of the machine might be convenient-
ly controlled by sliding a thick metallic tube over the coil, which,
forming a closed circuit, would gradually arrest the induced cur-
rent passing beneath it, and which I found to answer its purpose
completely.

Fig.1

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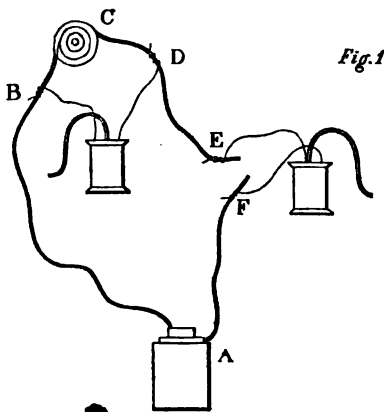
[1] "Monthly Journal," July 1848, p. 22.
[2] Sturgeon's "Annals of Electricity," vol. 5.

The machine is represented in Fig. 2.   The coil is fixed by half its length to the foot-board of the machine, to enable the counter-inducing tube to traverse along the other half.   Contact with the
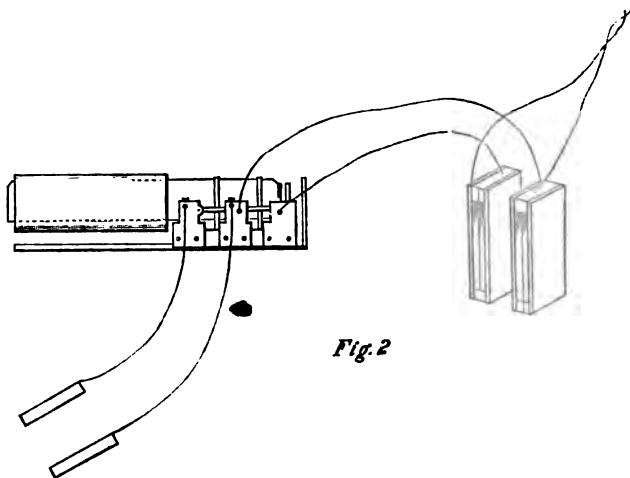

Fig. 2

battery is interrupted by a vibrating spring, armed with platina.[1] For general purposes, a small Smee's battery is amply sufficient to work the machine, but a still more powerful shock is obtained by combining two in series immersed in tumblers filled with the dilute sulphuric acid of the Pharmacopeia.   The entire apparatus may be packed in a box seven and a-half inches long, by three in diameter, and may be conveniently carried in the hand.   The whole is beauti-fully got up by Mr Dunn, of Hanover Street, who made the sketch of the instrument accompanying this communication. For the gene-ral run of medical cases, a much smaller instrument than the one above described will be sufficient.   I commonly use a little machine, three inches long by one-and-a-half in diameter, which is capable of completely paralysing the arms of persons grasping the conductors.

EDINBURGH, December 28, 1849.

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[1] The interruption of contact by means of a metal spring and platina points, was invented by me in the winter of 1839-40, when it was exhibited at the Manchester Victoria Gallery. It was afterwards published in Sturgeon's "Annals of Electricity" for March 1840.   I believe it is now the only method employed for that purpose.

Part Second.

REVIEWS.

PERCIVAL'S *Medical Ethics.* New Edition, with Notes, by Dr
  GREENHILL.
Code of Medical Ethics. By the AMERICAN MEDICAL ASSOCIA-
  TION.
RICHARD BAXTER'S *Compassionate Counsel to Students of Physic.*
Sir THOMAS BROWNE'S *Religio Medici, and Christian Morals.*
GAUBIUS *de Regimine Mentis quod Medicorum est.*
FULLER'S " *Good Physician,*" and " *Life of Paracelsus,*" in his
  " *Holy and Profane State.*"
SIMON, *Déontologie Médicale, ou des Devoirs et des Droits de Méditi-
  cins.*
GISBORNE, GREGORY, and WARE, *on the Duties of a Physi-
  cian.*
HUFELAND *on the Relations of the Physician to the Sick, to the
  Public, and to his Colleagues.*
BRITISH and FOREIGN MEDICAL JOURNAL *for* April 1846, *Art.
  IX.*
Dr AIKIN'S *Letters to his Son on the Choice of a Profession and the
  Conduct of Life.*

WE have named these excellent works, more with the view of re-
commending them to the study of such of our readers as may be
so inclined, than of reviewing them in the technical sense, still less
of going over exactly the same ground which they have already
so well occupied and enriched. Our object in selecting their names
out of many others, is, that they are good and varied, both as to
time, and view, and character,—and also that we may be saved
the referring to them more particularly.
    Our observations shall be of a very miscellaneous and occasional
kind—perhaps too much so for the taste or judgment of our
readers; but we think that a rambling excursion is a good and
wholesome thing, now and then.
    System is good, but it is apt to enslave and confine its master.
Method in art is what system is in science; and we, physicians,
know, to our sad and weighty experience, that we are more occupied
with doing some one thing, than in knowing many other things.
System to an art, is like an external skeleton to a crab or a tortoise,
more of a shield and covering than a support and instrument of
power. Our skeletons are inside our bodies, and so generally ought
our systems to be inside our minds.

Were we, for our own and our readers' satisfaction and entertainment, or for some higher and better end, about to go through a course of reading on the foundation of general morals, in order to deduce from them a code of professional ethics,— to set ourselves to discover the root, and ascend up from it to the timber, the leaves, the fruit, and the flowers—we would not confine ourselves to a stinted browsing in the ample and ancient field —we would, in right of our construction, be omnivorous, trusting to a stout mastication, a strong digestion, an eclectic and vigorous chylopoetic staff of appropriators and scavengers, to our making something of everything. We would not despise good old Plutarch's morals, or anybody else's, because we know chemistry, and many other things, better than he or they did ; nor would we be ashamed to confess that our best morality, and deepest philosophy of the nature and origin of human duty, of moral good and evil, was summed up in the golden rules of childhood, "Love thy neighbour as thyself." "Whatsoever ye would that men should do unto you, do ye even so to them." "Every man is thy neighbour." "Love is the fulfilling of the law." "Ye owe no man anything, but to love one another." This is the true birth-place of the word *ought*, that which we owe to some one, and of *duty*, that which is due by us ; and likewise of *moral*, that which should be customary, and *ethical* in the same sense ;—the only custom, which it will always be a privilege, as well as a duty to pay—the only debt which must always be due.

It is worth remembering that names too often become the ghosts of things, and ghosts, with a devil or a fool, instead of the original tenant inside. The word manners means literally nothing else, and ought never to be anything else, than the expression, the embodiment, the pleasant flower, of an inward *mos* or moral state. We may all remember that the "*Contes Morales*" of Marmontel— which were, many of them, anything but moral—were translated so, instead of Tales illustrative of *Manners*.

To go on with our *excursus erraticus*.

Were we going to take ourselves and our company into the past, and visit the *habitats* of the great moralists, and see the country, and make up our minds as to what in it was what, and how much to us it was worth,—we would not keep to one line—we would expatiate a little and make it a ramble, not a journey, much less an express train, with no stoppages,—we would, moreover, take our own time, choose our own roads, and our own vehicles,—we would stay where, and as long as we found entertainment, good lodging, and good fare, and did not lose our time or ourselves,—and we would come home, we hope, not informed merely, but in better health and spirits, more contented, more active, more enlightened, more ready for our daily work. We would begin at the beginning, and start early. In search of what is man's normal sense of duty, and how he is to do it, we would take our company to that garden,

planted eastward in Eden, where were all manner of fruits, pleasant
to the eye and good for food; that garden which every one believes
in—we don't mean geographically or geologically merely, but
really,—as a fact in the history of the race, and relics of which,
its sounds, its fragrance and beauty, he meets still everywhere
within him and around him, "like the remembrance of things to
come,"—we would there find the law, the normal condition, under
which the species was placed by its Maker—how the Infinite and the
finite, God and his children, giving and receiving, faith and works,
met together, and kept in tune—how, and by whom, man was
made upright, in mind as well as body—and what was that first of
the many inventions he found out, when he took of the tree of the
knowledge of good as well as of evil, and did eat.

Then we would move on to a wild mountain in Arabia, standing
at this day as it did on that, and, joining the multitude of that
peculiar people—whom we still see in the midst of us in our busy
world, and unchanged, the breed still unmixed—and out of the
bickering flame, the darkness and the splendour, and "as it were
the very body of heaven in its clearness"—we might hear those
ten commandments, which all of us have by heart, fewer in their
hearts. Lest we should fail with fear, we would go on into
the sunlight of Canaan, and forward many centuries, and in the
"Sermon on the Mount," sitting down among the multitudes,
hear our code of laws revised and re-issued by their Giver, and
find its summary easily carried away,—love to God, love to man,
loving our neighbours as ourselves.

Then might we go back and visit the Shepherd King, and carry
off his 104th, 105th, and 119th Psalms, and being there, we would
take a lesson in morals from his son's life—that wisest and foolishest
of men—and carry off with us his pithy "Proverbs."

Next we would intercept Paul's letter to his friends at Rome,
and make an extract of its 1st chapter, and its 12th and 13th,
and end by copying it all; and having called on James the Greater,
we would get his entire epistle by heart, and shut up this, our
visit to the Holy Land, with the sound of the last verse of the
second last chapter of the Apocalypse ringing in our ears.

We would then find Socrates, Plato, and Aristotle, and all those
noble fellows, busy at their work, showing us how little and how
much man, with the finest organisation, and the best discipline,
can do for himself in the way of lifting himself from the ground,
and erecting himself above himself, by his sheer strength; and
we would not fail to admire the courage, and the deep moral
intensity and desire, the amazing beauty and energy of ex-
pression, the amplitude and depth of their ideas, as if minds
were once giant as well as bodies. But we would not tarry
with them, we would wish rather to take them with us, and get
Socrates to study the Sermon on the Mount, and Plato the Pauline
Epistles, where he would meet his fellow, and more than his match,

in subtlety and in sense, in solid living thought, in clear and passionate
utterance, in everything that makes thought felt, and feeling under-
stood, and both motive and effectual. Then would we hurry over the
dreary interval of the middle passage of the deserts of sand—where
Aristotle's blind children of the mist might be seen spinning ropes,
not out of themselves, like the more intelligent and practical spider,
but out of the weary sand—ropes, signifying nothing; and we might
see how, having parted with their senses, they had lost themselves,
and were *vox et præterea nihil.*

But we must shorten our trip. We would cool ourselves, and
visit old Hobbes of Malmesbury, in his arctic cave, and see him
sitting like a polar bear, muttering protests against the universe,
nursing his wrath as the only thing with which to warm and cheer
that sullen heart, and proclaiming that self-love is every kind of
love, and all that in man is good. We would wonder at that
palace of ice, symmetrical, beautiful, strong—but below zero. We
would come away before we were benumbed, admiring much his
intrepid air, his keen and clean teeth, his clear eye, his matchless
vigour of grip, his redeeming love for his cubs, his dreary mistake
of absolute cold for heat, — frozen mercury burning as well as
molten gold. Leaving him, after trying to get him to give up his
cold fishy diet, his long winters of splendid darkness, and come and
live with us like a Christian, we would go to an English country-
house, to Lady Masham's, at the Oates, the abode of comfort, cheer-
fulness, and thoughtful virtue; and we would there find John Locke
"communing with the man within the breast," and listening rever-
ently, but like a man; and we would carry off from her table her
ladyship's father's huge magazine of learning, strong intellect, and
lofty morality—his treatise "concerning Eternal and Immutable
Morality." Then we might call for Locke's pupil, Lord Shaftesbury,
the great man and the courtier, but the philosopher too, having
glimpses of better things, and coming very close to what we are in
search of—*a special moral faculty;* and we would find our friend, Dr
Henry More, in his laboratory, dreaming in his odd Platonic way,
of a "*boniform faculty.*"

Next, we would set sail across the Atlantic, and reach in the
evening, the mild skies of the "vex't Bermoothes," and there find
the beautiful-souled Berkeley dreaming of ideal universities in
the far west—of a new world, peopled with myriads as happy,
as intelligent, as virtuous as himself; dreaming, too, of his pan-
cratic "Tar Water," and in his "Siris" ascending from it, by a
Jacob's ladder of easy grade, to Plato's heaven. And, being in the
neighbourhood, we might as well visit New England, and among its
hedge-rows and elms, and quiet old villages, forget we are in New
Hampshire—not in Old—and see in his study a country clergyman,
with a thoughtful, contented look, and an eye rich with a grave en-
thusiasm—Jonathan Edwards—"whose power of subtle argument,
perhaps unmatched, certainly unsurpassed, among men, was joined

with a personal character which raised his piety to fervour." We might watch him with his back to the wall of his room, his right heel turning diligently in a hole of its own making in the floor, and the whole man absorbed in thought;[1] and we would bring off what he thought of the "Nature of True Virtue, and God's chief end in the Creation;" and we would find that, by a mental process as steady as that of the heel—by his intrepid excogitation, his down-right simplicity of purpose, and the keen temper of his instrument, he had, to borrow an exquisite illustration, pierced through the sub-soil—the gravel, the clay, and rocks—down to the fresh depths of our common nature, and brought up, as from an Artesian well, his rich reward and ours, in the full flow of the waters of virtue—not raised, *per saltum*, by pump or high-pressure, but flowing, *pleno-rivo*, by a force from within.

On our return, we might fall in with an ardent, but sensible Irishman,[2] teaching moral philosophy at Glasgow, and hitting, by a sort of felicity, on what had been before so often missed, and satisfying mankind, at least, with the name of a *moral sense*—as distinct as our sense of bitter and sweet, soft and hard, light and darkness. Then might we take a turn in his garden with the Bishop of Durham, and hear his wise and weighty, his simple and measured words. " Nations, like men, go at times deranged." "Everything is what it is, and not another thing." " Goodness is a fixed, steady, immoveable principle of action." " Reason, with self-love and conscience, are the chief or superior principles in the nature of man; and they, if we understand our true happiness, always lead us the same way." " Duty and interest are perfectly coincident, for the most part, in this world; and in every instance, if we take in the future and the whole." We would carry off all his sermons, and indeed everything he had written, and distribute his sermons on the " Love of God," on " Self-Deceit," " The Love of our Neighbour," and " The Ignorance of Man," all along our road, to small and great.

We would look in on the author of the " History of the Ethical Sciences," on his return, perhaps tired and dispirited, from a speech on the principles of natural and immutable law, in " the House," when all had been asleep but himself and the reporters; and we would listen for hours to his unfolding the meanings which others, and which he himself, attached to that small word—ought; and hear him call it " *this most important of words;*" and we would come away charmed with the mild wisdom of his thoughts, and the *lactea ubertas* of his words.

We would merely leave our card at Jeremy Bentham's, that despiser

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[1] Some years ago, an intelligent New England physician told us that this was the great metaphysician's habit and attitude of study, and that he had often seen the hole which the molar heel made during years of meditation.

[2] Hutcheson.

of humbug in others and unconscious example of it in himself, and
we would bring off his " *Deontological Faculty.*"   Neither would we
care to stay long with that hard-headed uncomfortable old man of
Kœnigsberg,—losing himself, from excess of strictness, in the midst
of his metaphysics; and we would with pity and wonder hear him
announce that dreadful " categorical imperative " of his, which has
been said, with equal wit and truth, to be, " at its best, but a dark
lantern, till it borrows a utilitarian farthing candle—a flaming sword
that turns every way but drives no whither "—proclaiming a para-
dise lost, but in no wise pointing the way to a paradise to be regained.

And before settling at home, we would look in and pay our re-
spects in our own town, to a beneficent, benevolent, enlightened, and
upright man, with whom we could agree to differ in some things,
and rejoice to agree in many ; and we would bring away from him
all that he could tell us of that " conscientiousness"—the bodily or-
gan of the inward sense of personal right and wrong, upon the just
direction of which,—no one knows better than he does,—depends the
true safety, and dignity, and happiness of man.

But after all our travel we would be little the better or the wiser
if we ourselves did not inwardly digest and appropriate, as " upon
soul and conscience," all our knowledge.   We would much better not
have left home.   For it is true, that not the light from heaven, not
the riches from the earth, not the secrets of nature, not the minds
of men, or of ourselves, can do us anything but evil, if our senses, our
inward and outward senses, are not kept constantly exercised, so
as to discern for ourselves what is good and evil in us, and for us.
We must carry the lights of our own consciousness and conscience,
into all our researches, or we will, in all likelihood, lose our pains.

As we have been, however, on our travels, *quâ medici*, as well
as general tourists, we shall give the names of some of our best
medical moralists :—The Oath and Law of Hippocrates, and above
all, his personal character, and the whole spirit of his writings and
practice—Stahl—Sydenham's warning and advice to those who
purpose giving themselves to the work of medicine—the four things
he would have them to weigh well ; the two admirable academic
sermons of Gaubius, " *De Regimine Mentis quod Medicorum est* " —
Gregory on the " Duties of a Physician"—Dr Denman's Life, by
his son, the Lord Chief Justice, and Dr Gooch's—*not* Dr Hope's,
for reasons we might, but do not, give—Dr Baillie's character, per-
sonal and professional—Dr Abercrombie's, and the books we have
put at the head of this paper.

Dr Percival's " Ethics" is a classical book, in its best sense ; sen-
sible, sound, temperate, clear thoughts, conveyed in natural, clear,
persuasive language.   Its title is somewhat of a blunder : at first it
was " Medical Jurisprudence," and " Ethics " means at once more,
and not so much, as what it is made by him to represent.
" The Duties of a Physician" would have been less pedantic, and

more correct and homely.   There is a good deal of the stiffness
of the old school about the doctor; he speaks as if in knee breeches
and buckles, with a powdered wig, and an interminable silk waist-
coat, a gold-headed cane at his side, and his cocked hat not far to
seek.   To us, however, this is a great charm of the book, and of
such books.   There may be stiffness and some Johnsonian swell
about them ; some words bigger than the thoughts, like a boy in
his father's coat ; some sentences in which the meaning ends before
its voice, and the *rummel* resounds after having parted company
with the *gumption;* but with all this, there is a temperance and
soundness of view—a good breeding, and good feeling, and a reti-
cence and composure, which, in this vapouring, turbulent age of
ours, is a refreshing pleasure, though too often one of memory.

We are truly glad to see, from a modest note by Dr Green-
hill, the editor, that he is engaged on a work on medical morals.
He will do it well and wisely, we have no doubt.   The profession
is deeply indebted to him for his edition of Sydenham—the
worthiest monument the gratitude of his admiring followers could
raise to that great man.   His "Life of Hippocrates," in Smith's
Dictionary, and other contributions to medical philosophy and bio-
graphy, also do him much credit; more, we are sorry to say, than Dr
R. G. Latham's queer life of Sydenham does himself or the "So-
ciety."   What with his logical formulas, his gift at reposing on the
certainty of doubt, his balancing of words and sentences against
each other, and his left-handed, amorphous style, we may say
that he has succeeded in taking the great physician's life in a
sense justiciary rather than literary.   It has somewhat confirmed a
notion we have that a man's science is often too much for his art,
and that it is sometimes easier to know what a thing is, than how to
do it, when we find that the author of this very odd performance
in the English tongue is also the author of the well-known and
valuable treatises on "Grammar," "Logic," and "Language."
Analysis is not only different from, it may, if not watched against,
unfit for, synthesis.

We have placed Fuller's "Holy and Profane State" on our list,
specifically on account of its chapters on "The Good Physician,"
and the "The Life of Paracelsus," the "True Gentleman," and
the "Degenerous," and likewise that we might tempt our readers
to enjoy the whole of this delightful little book, and as much else
of its author, as they can get hold of.   They will thank us for this,
if they do not already know him, and excuse us if they do.   Dr
Fuller is a man who, like Dr South and Sydney Smith, is so
intensely witty, that we forget, or do not notice, that he is not less
eminently wise; and that his wit is the gay blossom of wisdom.
Here are some of his *sententiolæ vibrantes:*—

" The Good Physician hansels not his new experiments on the bodies of his

patients, letting loose mad *recipes* into the sick man's body, to try how they and nature will fight it out, while he stands by and enjoys the battle,—except in desperate cases, when death must be expelled by death. Lest his apothecary should oversee, he oversees his apothecary. He brings not news, like a false spy, that the coast is clear, till death surprises the sick man. I know physicians love to make the best of their patient's estate ; first, say they, it is improper that *adjutores vitæ* should be *nuncii mortis;* secondly, none with their goodwill will tell bad news ; thirdly, their fee may be the worse for it ; fourthly, it is confessing their art beaten ; fifthly, it will poison their patient's heart with grief. So far well ; but they may so order it, that the party may be informed wisely, and not outed of this world before he is provided for another."

We give the last sentence of his " Life of Paracelsus," that renowned, but ill-understood, medley of evil and good, darkness and light, of quackery and skill :—

"In a word, he boasted of more than he could do ; did more cures seemingly than really, more cures really than lawfully ; of more parts than learning, of more fame than parts ; a better physician than a man, a better chirurgeon than physician."

Here are the chief points of the " degenerous gentleman,"—they are like mottos to the chapters on the physiology of the noble rake in all ages :—

" He goes to school to learn in jest, and play in earnest. His brother's serving men, which he counts no mean preferment, admit him into their society ; coming to the university, his study is to study nothing ; at the inns of court, pretending to learn law, he learns to be lawless, and grows acquainted with the '*roaring boys.*' Through the mediation of a scrivener, he is introduced to some great usurer," &c. &c.

Sir Thomas Browne's *Religio Medici,* though full of true morality,—of subtle and profound thought, and most pathetic touches, —as well as instinct with his own peculiar, grave, antique humour, and quaint thought—as odd as the root of an orchis, and, in its expression, as richly emblazoned with colours, as queerly gibbous as its flower, has less to do with our immediate subject than his " Christian Morals," which are well worth the perusing. Here is a sample :—

"Live up to the dignity of thy nature ; desert not thy title to a divine particle—have a glimpse of incomprehensibles, and thoughts of things that thoughts but tenderly touch. Lodge immaterials in thy head, ascend until invisibles fill thy spirit with spirituals, with the mysteries of faith, the magnalities of religion, and thy life with the honour of God."

This is good wholesome advice at any time, and not the least so now, when sensible things are cross-questioning us more keenly and urgently than ever, when matter is disclosing fresh wonders every day, and telling her secrets in crowds; and, when we are too apt to be absorbed in her—to forget that there is something else than this earth—that there is more than meets the eye and ear—that seeing is not believing—that it is pleasant, refreshing, and wholesome, after the hurry and heat and din of the day, its lights and its eager work, to cool the eye and the mind,

and rest them on the silent and clear depths of night—"sowed with stars thick as a field." Let us keep everything worth keeping, and add, not substitute; don't let us *lose ourselves* in seeking for our basic radical, or our primary cell; let us remember that the analytic spirit of the age may destroy as well as instruct, and may do harm as well as good; that while it quickens the pulse, strengthens the eye and the arm, and adds cunning to the fingers, it may, if carried to excess, or to overweening, confuse the vision, stupify and madden the brain; derange as well as direct, and have a madness, in its method.

We have no book in our language to compare with Simon's Deontology, in its largeness, earnestness, and power of treatment; it is admirable in substance and in form, and goes through the whole duty of the physician with rare intelligence, eloquence, and tact.   It has what all first-rate French writers have—the charm of definite ideas and definite expressions, the "*maniere incisive*" which we so much want.   Had we room we would gladly have quoted his remarks on style—its nature and its value to the physician; he himself exemplifies what he teaches.   On this subject we would direct attention likewise, to the able and lively article in the "British and Foreign Review." [1]   We cannot help quoting Buffon's words—they illustrate themselves.   They are from his "Remarques sur le Style."—"Les ouvrages bien écrits sont les seuls qui passeront à la postérité, la quantité des connaissances, la singularité des faits, la nouveauté même des decouvertes, ne sont pas de sûrs garants de l'immortalité; si les ouvrages q'ui les sans contiennent ne roulent que sur de petits objets, s'ils sont écrits goût, sans noblesse, et sans génie, ils périront parce que les connaissances, les faits, les découvertes s'enlèvent aisément, se transportent, gagnent même á être mises en œuvre par des mains plus habiles. *Ces choses sont hors de l'homme, le style est l'homme, même.*" The turbid, slovenly style, constipated, or the reverse, by which much of our medical literature is characterised, is a disgrace to our age, and to the intelligence, good taste, and good breeding of our profession, and mars inconceivably the real good that lies concealed and bungled within it.   No man has a right to speak without some

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[1] On a very different, but by no means inconsiderable subject, we quote this cordial and wise passage from the same article. Speaking of the *odium medicum,* "the true remedy for professional jealousies is frequent intercommunication,— *a good dinner at the Royal* ('or at the Archers' Hall!'), would heal the professional feuds of a large town.   The man of science who thinks he practises his profession for the sheer love of it, may smile at the sensualness of the means, and it may not be the remedy he requires ('he will be all the better of it, say we'); but most practitioners are men of the *métier,* and like a dinner of the craft as well as others.   We wish there were a medical guild in every large town, with *an ample dinner fund* ('and a round of *carminatives* afterwards')— good fellowship would increase and abound, and with it unity of purpose, honour, public and personal esteem."

measure of preparation, orderliness, and selectness. As Butler says, " *Confusion and perplexity of writing is indeed without excuse, because any one, if he pleases, may know whether he understands and sees through what he is about; and it is unpardonable for a man to lay his thoughts before others, when he is conscious that he himself does not know whereabouts he is, or how the matter before him stands. It is coming abroad in disorder, which he ought to be ashamed to find himself in at home.*" Whately, in reply to a youth who asked him how to write clearly, answered, "think clearly." This is the secret.

We would, had space permitted, have wished to have gone more particularly into the higher moralities of physicians, and into some of the more miscellaneous conditions which interpenetrate morals, manners, and etiquette; for etiquette, with all its littlenesses and niceties, is founded upon a central idea of right and wrong; and on the rightness or wrongness of that idea, depends the true significance and worth of the merest punctilio.

We would likewise have wished to have said some few things of the public and professional religion of a doctor, and its relation to his personal; and something, also, of that *religiosity* which, besides its ancient endemic force, as old as our species, is at present dangerously epidemic—a pseudo-activity, which is not only not good, but virulently bad, being at once as like and as opposite to the true, as the deadly, stupifying, maddening hemlock is to the cheerful, wholesome, savoury parsley.

We would like, also, to have had a jocular hit at our pedantry and foolish parade of science, our ignorance of general literature, our contempt of the ancients, and a few more little odds and ends, on which we hold strong opinions; but we must draw to an end, if not to a conclusion.

We have, indeed, to ask pardon of the readers of such a journal as this, for such a paper, and for having led them such a ramble, but we were anxious to persuade our young friends, who, having " passed," and settled down, are waiting for practice, not merely to busy themselves for the next seven or eight barren years, in their own immediate circle—we are sure they will not suspect us of wishing them to keep from what is their highest duty and greatest pleasure—but to persuade them, when they have some leisure, and long evenings, and few cases, to read such books as Hobbes, Berkeley, Butler, Paley, Baxter, Mackintosh, &c.; to keep up their classical knowledge, and go over Horace's "Art of Poetry," Cicero's Epistles and Philosophical Treatises, Seneca, Marc Antonine, and such like —not to mention a more sacred book, which they ought to read all their lives, and use every day, as the perfect rule of duty, the lamp to their feet, the light to their eyes.

We may be thought to be making too much of these things. It would be difficult to do so, when we consider what we, as physicians, are supposed to profess—practising, as we do, not merely one of the arts of life, getting honourably a living—and not merely en-

abling our fellow-men to do the same—but constantly watching at the *janua vitæ et mortis*, our main duty being to keep men alive. Let us remember what is involved in the enjoyment and the loss of life—that perilous and inestimable something, which we all know how much we ourselves prize, and for which, as we have the word, long ago, of a personage [1] more distinguished for his talents than his virtues, and uttered in a presence where even he dared not tell a lie direct, that "all that a man hath he will give," so let it be our urgent moral duty, as its conservators, to give all that *we* have, our knowledge, our affections, our energies, our virtue (αρετη, *virtus*, the very essence or pith of a man), in making our patients healthy, long-lived, and happy. We conclude with two quotations, the first from the mouth of one of the best men of our profession— one of the greatest public benefactors—one of the truest and most genial of friends—and of whose merits we would say more, were he not still, to our great comfort, in the midst of us, for we agree with the ancients in this, as in some other things, holding, as they did, that it was not becoming to sacrifice to their heroes till after sunset. "My religion, as it affects my life to God, to myself, to my fellow-men, consists mainly of *wonder and gratitude*." This is the religion of paradise and of childhood. It will not be easy to find a better, even in our enlightened days; only it must be a rational wonder, a productive gratitude—the gratitude that rests not contented with the emotion, but goes at once into the motive—and a wonder which, in honouring God, knows him, and in honouring all men, respects its possessor.

The *next* is the admonition we have already referred to, by Sydenham. Our readers will find, at its close, the oldest and best kind of homœopathy—a kind which will survive disease and the doctors, and will never, as may be said of another, cure nothing except itself.

"He who gives himself to the study and work of medicine ought seriously to ponder these four things—1st, That he must, one day, give an account to the Supreme Judge of the lives of the sick committed to his care. 2dly, That whatsoever of art, or of science, he has by the Divine goodness attained, is to be directed mainly to the glory of the Almighty, and the safety of mankind, and that it is a dishonour to himself and them, to make these celestial gifts subservient to the vile lusts of avarice and ambition. Moreover, 3rdly, that he has undertaken the charge of no mean or ignoble creature, and that in order to his appreciating the true worth of the human race, he should not forget that the only-begotten Son of God became a man, and thus far ennobled, by his own dignity, the nature he assumed. And lastly, that as he is himself not exempted from the common lot, and is liable and exposed to the same laws of mortality, the same miseries and pains, as are all the rest; so he may endeavour the more diligently, and with a more tender affection, as being himself a fellow-sufferer (*ομοιοπαθης*) to help them who are sick."

For to take a higher, the highest example, we must "be touched with a feeling of the infirmities" of our patients, else all our skill and knowledge, will go but half-way to relieve or cure.

[1] Job ii. 4.

Since closing the above, we have read "EVENING THOUGHTS, BY A PHYSICIAN," just published by Van Voorst. Let our readers lay out four-and-sixpence, and they will get their reward, and we our thanks, and the admirable author their gratitude. Who is he? Have we met him before in any other walk?

Annual Report on the Progress of Chemistry and the allied Sciences. By JUSTUS LIEBIG, M.D., and H. KOPP, Professor of Physics and Chemistry in the University of Giessen, with the co-operation of H. Buff, E. Dieffenbach, C. Ettling, F. Knapp, H. Will, and F. Zaminner. Parts I. II. and III. Edited by A. W. Hoffmann, Ph.D., and W. De La Rue, Esq. London. 1849.

FEW works have had a more important influence upon the progress of chemistry than the Annual Report which was, for many successive years, submitted by Berzelius to the Swedish Academy of Sciences, and its cessation with his death, left a blank in the literature of chemistry, which it is the object of the present work to fill. The authors of the new report have included in it the whole range of the physical sciences related to chemistry, which were formerly discussed by Berzelius, but have latterly formed the subject of a separate report to the Swedish Academy, which has never been translated. This addition is one of great importance, and we consider it likely to be of especial utility in this country, where it has of late years been too much the custom to undervalue the physics of chemistry as a branch of academic instruction, and, in some instances, even to exclude that department entirely from our ordinary courses of lectures on chemistry. A large section of the present report is wisely devoted to a review of the progress of Heat, Light, Electricity, Magnetism, and the other branches of chemical philosophy. We are even inclined to consider this the most complete and best executed part of the work, and we may refer the reader to the complete and elaborate résumés of the important researches of Pierre and Kopp, on the dilatation of fluids, and of Faraday, Plücker, and others, on diamagnetism, as good illustrations of the manner in which it has been executed. Our limits forbid our entering into any details regarding the various subjects treated of in the first three parts of the report: we must content ourselves with recommending it to our readers as a work likely to have the effect of increasing the interest which is now beginning to be felt in the progress of chemistry in this country, and which is almost indispensably necessary both to the scientific and the practical chemist. We will not venture to assert that it is in all respects to be compared with the reports of Berzelius. As the work of no less than eight different hands, it necessarily presents some inequality in its different parts, and is deficient in that unity which peculiarly characterised the reports of the Swedish chemist, and gave the opinions they expressed so much influence with the chemical public. The great difficulty in the publication

of such a work at the present time, when the opinions of chemists are
so much divided, consists in the risk of making it the expression of
the doctrines of an individual school. A report of this kind ought
to be an independent and strictly impartial work, and should aim at
giving, in equal detail, the doctrines of all chemists.   In the pre-
sent publication this difficulty has been in general successfully
avoided. We think, however, that the opinions of M. Gerhardt,
and what he calls his unitary system of chemistry, which is now
embraced by some of the most distinguished chemists of the French
school, deserved, on that account, whether correct or not, to be
treated of in detail, in place of being merely mentioned in an inci-
dental manner.

     While we thus commend the work, however, we should not faith-
fully perform the duty of critics without remarking that we cannot
congratulate the English editors on the manner in which their part
of the duty has been performed. The translation is very lame in-
deed, and the German idiom is apparent in every page—we had
almost said in every sentence. Then we have thermology in place
of heat, *vegetal* colours instead of vegetable colours, and on page
441, we find an account of " the cashu nut or mahogany nut *de-
scending* from anacardium or cassuvium occidentale," and many other
equally curious expressions. It is to be regretted, also, that the edi-
tors have not translated the Foreign into English weights and mea-
sures, which would have involved no great labour, and added consi-
derably to the value of the work. We trust that in future more pains
will be taken with these matters, and that the English translation
of the subsequent volumes may do justice to the importance of the
work.

*Essays on Syphilis.—Essay I. Syphilitic Sarcocele.   By JOHN
     HAMILTON, Surgeon to the Richmond Hospital, Dublin.*

MR HAMILTON, in his capacity of surgeon to the Richmond Hos-
pital, enjoys ample opportunities of observing venereal disease in
all its forms, and has put forth an essay on syphilitic sarcocele,
which he purposes to be the first of a series of similar essays, should
this be favourably received by the profession. As a plain practi-
cal statement of observation and experience, involving no pet hypo-
theses or theories, we cordially recommend this little work to our
readers, and look with interest for a continuation of Mr Hamilton's
essays on syphilis.

     Mr Hamilton is of opinion, that there are two forms of venereal
chronic disease of the testis, which have generally been confounded
together, but which it is of importance to distinguish, as they re-
quire different modes of treatment. He names them simple syphi-
litic sarcocele, and tubercular syphilitic sarcocele. They are dis-
tinguished from simple chronic enlargement of the testis, or from
ordinary strumous orchitis, either by the co-existence of well-marked

secondary symptoms, or by these having preceded the affection of the testis; and from ordinary gonorrhœal orchitis, by the acute and exquisitely painful character of the latter.

Mr Hamilton shall describe the two affections for himself, as regards external characters, morbid anatomy, and treatment:—

" In the simple syphilitic sarcocele the testicle will be found enlarged to the size of a lemon or turkey-egg, of an ovoid or pyriform shape, sometimes flattened at the sides; either uniform on the surface, or with the epididymis distinguishable as an irregular ridge along the back; hard, particularly in the situation of the epididymis; heavy, with the integuments of the scrotum of a dusky red; generally neither tender nor painful, except that the hanging weight causes a feeling of uneasiness in the loins and inside of the thighs. In this respect it differs remarkably from gonorrhœal orchitis, where the tenderness is so exquisite and the pain usually so great. I have never met with the nocturnal exacerbation of pain noticed by Sir A. Cooper and Mr Curling, the last of whom mentions ' the testis becoming occasionally more tumid and painful during the evening exacerbation,' as a point of distinction between venereal and common chronic sarcocele.

" The essential symptoms, therefore, of the simple syphilitic sarcocele are, its occurring in persons of healthy constitutions, with the more simple and manageable forms of secondary symptoms, its large size and slow progress."—P. 7.

This form of the disease generally affects only one testicle, and never ends in suppuration. Both it and the tubercular form are almost always accompanied by more or less of hydrocele, either of the tunica vaginalis or of the cord. The secondary symptoms usually associated with it are the mottled, papular, pustular, and scaly eruptions, syphilitic blotches, iritis, and affections of the bones and throat, of tractable nature.

The pathological changes in this form of the disease are little known, as, from the general recovery of the patients, opportunities of examination are rare. Mr Hamilton, from what he has been able to observe in two or three cases, conceives them to consist in the deposition of firm organised lymph of a pale yellow colour, into the intestinal cellular tissue external to the tubuli testis, as well as probably into the tubuli themselves.

In point of treatment, Mr Hamilton is a most resolute mercurialist, as the following extract will show:—

" In the simple syphilitic sarcocele, a steady and somewhat protracted course of mercury should be employed; it is, in fact, the only certain means of cure. I have frequently seen the non-mercurial treatment tried, and have observed it to be very unsuccessful; and that mercury had to be given at last, after much time had been lost, and the integrity of the testicle jeopardised. Five grains of blue pill, or, what I prefer, five grains of mercury and chalk, guarded with one-eighth of a grain of opium, or, where the bowels are inclined to be irritable, one-fourth of a grain, should be taken three times a day; or the patient should rub in daily one drachm of strong mercurial ointment, till the mouth is well affected, the gums ulcerated, and salivation induced. The mercurial action should be sustained for six or eight weeks; longer than the latter period is generally unnecessary, for though the testicle may not be, at the end of this time, quite restored, yet the improvement commenced during the exhibition of the mercury goes on after its discontinuance, till the testicle has regained its natural state."—P. 27.

His local treatment consists in leeching, and lead lotion, when there is pain or tenderness; and, when these are not present, a little mercurial ointment rubbed in, or laid on by a piece of lint. When, after the body of the testicle, in which amendment first shows itself, has become soft, the epididymis remains hard, he uses diluted iodine ointment; and he does not consider recumbent posture—so much insisted on by Sir Astley Cooper—or even confinement to the house, requisite.

Mr Hamilton's second form of the disease, tubercular syphilitic sarcocele, or that which occurs in persons of bad and scrofulous constitution, is thus described :—

" The tubercular syphilitic sarcocele is much more common, and differs materially, both in local and constitutional symptoms, from the simple form.

" The testicle is enlarged from two to four times its natural size, but the increase of size is generally not remarkable; of very irregular shape, so that the ordinary form of the testicle is often entirely lost, presenting, instead, an uneven, hard, knotty mass, in which it is impossible to distinguish the body from the epididymis.   At other times the irregularity is seen to arise from the enlarged and indurated epididymis, which gets of a great size compared to the body of the testicle, that remains but little altered, and readily distinguishable from it.   In the gonorrhœal orchitis we well know that the inferior globus of the epididymis is usually the part most enlarged and hard, and often keeps so long after the testicle has recovered ; whereas in the tubercular syphilitic sarcocele, I have more frequently met with enlargement of the upper globus of the epididymis, sometimes excessive and disproportioned to the other parts of the testicle.   The reason of this may be, that in gonorrhœal orchitis the inflammation extends from the vas deferens at the inferior part of the epididymis to the cellular tissue external to it, with effusion of lymph, causing swelling and induration ; whereas in the tubercular syphilitic sarcocele, the swelling of the superior globus of the epididymis depends on the presence of a tubercle imbedded among the vasa efferentia of which it is constituted."—Pp. 10, 11.

The constitutional symptoms which accompany it are of aggravated character generally, and more particularly the author considers as almost constant attendants upon it an annular or serpiginous pustulo-crustaceous eruption, spreading in rings, and soft cranial nodes, with caries of the skull.

The pathology of this form of the affection has been better observed, from patients more frequently sinking under the aggravated state of general disease of which it forms a part.   It consists in the presence of one or more tubercles in the body of the testis, or epididymis, varying in size from a hemp-seed to a chestnut, and upwards.   They are enveloped in a well-defined cyst, and the yellow matter, which is sometimes in distinct laminæ, is unorganised, as it will not receive injection, even when this has been most successfully thrown into the testis.   Sometimes the tubercles increase to such an extent as utterly to efface the glandular structure of the testicle.

Whilst the simple form of the disease never ends in suppuration, this very often occurs in the tubercular form, and leads, by the

usual processes of slow abscess, thin unhealthy discharge, sinuses, &c., to the total disorganisation of the testicle.

The plan of treatment for the tubercular form of the disease is thus propounded :—

" Some surgeons have great confidence in the hydriodate of potash in curing syphilitic diseases of the testicles, and the accompanying symptoms in broken constitutions ; my experience leads me to be less sanguine. I have, in such cases, tried this medicine either simply in water, or with the infusion or compound decoction of sarsaparilla, and in fair doses, for several weeks, without completely curing the disease. The constitutional and local affections have, at first, exhibited rapid signs of amendment, but after a time this improvement has stopped. I do not deny that cases of the tubercular syphilitic sarcocele may be cured by the hydriodate of potash alone ; but after having tried it for weeks in some cases, I have only succeeded in procuring partial amendment ; and I have met with many cases where this remedy had been tried for many months in doses of ten grains, two or three times a day, with no better success. The plan which I would recommend, and which, except where the testicles have been totally disorganised, I have never known to fail, is a combination of the mild mercurial treatment with the administration of the hydriodate of potash at the same time. The latter, by its beneficial influence on the constitution, enables it to bear the mercury which radically cures the effects of the syphilitic poison, and expels it from the system.

" Fifteen grains of the hydriodate of potash are dissolved in a pint of the compound infusion or compound decoction of sarsaparilla ; of this the patient takes a third part in the morning and at mid-day, and ten grains of blue pill at bed-time. In a week or ten days the gums get a little sore, when the blue pill may be reduced to five grains at night. He should go about as usual, and be a good deal in the open air, and the diet should be generous. The dilute iodine ointment may be applied to the testicle."—Pp. 31, 32.

The process of cure, we are informed, may occupy two or three months—more commonly the latter period ; because, says Mr Hamilton, " we should remember that we have not only to cure the symptoms of the present disease, but to eradicate a poison from the system, and a long-contracted habit of diseased action."

We have preferred giving Mr Hamilton's statements nearly in his own words, and without comment, believing that to our practical readers they will be most acceptable in this form. We take the liberty, however, of saying, that to us iodine has not proved so treacherous as it has to Mr Hamilton. We have obtained results, which we considered to be very satisfactory, from the internal use of hydriodate of potash, with the local application of the tincture, which is cleaner, and less apt to irritate severely, than the ointment. We are also rather inclined to believe that mercury, which has so much to do with the cure in Mr Hamilton's hands, is not altogether innocent as a cause of the manifestation of these particular forms of venereal disease. They are, certainly, comparatively rare, where the patient has not been mercurialised before; and, on looking over the seven cases detailed by Mr Hamilton, we find that three took mercury for the primary disease ; two took it for secondary symptoms (one of them taking iodine at the same time) ; and in two it is not stated whether mercury was used

or not. We have no desire, however, to prolong discussion on this matter.

We recommend Mr Hamilton's book, especially the pathological portions, to our readers. We do not pledge ourselves to adopt his practice; but we have to thank him for a clear and succint description of two varieties of disease, which appear to be fairly entitled to the distinctive appellations which he has bestowed on them.

Eruptions of the Face, Head, and Hands, with the latest Improvements in the Treatment of Diseases of the Skin. By T. H. BURGESS, M.D. London. 1849. 8vo. Pp. 254.

DR BURGESS has had the most extensive opportunities of studying skin diseases in the hospitals of Paris, Rome, Florence, and Milan; he is the translator of Cazenave's work into English; and now presents us with an original treatise, which, in many respects, deserves to be perused by the medical practitioner. It has occurred to the author that in the same manner as anatomy is greatly facilitated by dividing the body into regions, and describing the original pathology of these parts; so a knowledge of the pathology of the skin may be equally facilitated by dividing the cutaneous surface in a similar manner, and describing the diseases of each region separately. But it does not seem to have struck the author that anatomical regions differ much more from one another than various portions of the skin do; and that, whilst there is a close analogy between the integuments of the face, head, and hands, there is scarcely any between the anatomy of the neck, the axilla, and the groin. Still it cannot be denied that certain skin eruptions have a predilection for certain portions of the surface. Thus, scabies is most common on the hands, and never occurs on the face, and lupus is almost always found on the face, and never on the hands; acne occurs only on the face and shoulders, and sycosis only on the chin. In the preface (p. vi.), Dr Burgess tells us that modification in the structure of the skin will cause these variations; and, had he succeeded in proving this proposition, a very important step would have been made in our pathological knowledge of cutaneous diseases. But on turning to the description of scabies, lupus, acne, and sycosis, we nowhere find it pointed out what these modifications in the structure are, and in fact the author leaves the *cause* of their occurrence in particular places involved in the same mystery as he found it. It is certain that, when eruptions occur in parts covered with hair, the scabs and scales become aggregated together, and more dense, so as to present to the eye an appearance different to that exhibited in other parts. But this is merely owing to the mechanical effect of the hair amalgamating itself with the products of the eruption, and not to any essential peculiarity in the nature of the disease, or its being situated in the re-

gions of the head, face, and hands. We cannot, therefore, agree with the author in believing, that the study of skin diseases is in any way facilitated by dividing the surface into regions, nor that such arbitrary classification is based on a more anatomical foundation than that of Willan and Bateman.

While we differ thus from Dr Burgess as to the propriety of the division of skin diseases, as they affect different regions of the surface, there can be little doubt that his general views of their pathology, and notions of treatment, are very superior to those of most modern writers. Thus he observes in the introduction:—

"We must take a more comprehensive view of cutaneous maladies, and study this class of affections more in the light of *general* diseases than we have been accustomed to do, if we wish to arrive at an accurate knowledge of their nature; for daily observation proves, that the study of diseases of the skin cannot be detached from that of general pathology, and of the many morbid conditions with which they have such numerous and varied relations. Indeed, it would be a grave error to separate certain cutaneous eruptions from lesions of other systems, when both derive their origin from the same cause, and are in reality but different symptoms of one and the same disease. The eruptive fevers and the syphilides, for example, are constitutional diseases, or rather the sequelæ of constitutional diseases, and to view them in the light of special or local affections would be to mistake their nature altogether. Eruptions of constitutional origin, however, by long standing, may sometimes assume a local character. Erysipelas and acne frequently supervene in cases of derangement of the uterine functions. Strophulus is associated with the process of dentition. Urticaria, lichen urticatus, and several varieties of herpes, are often the results of a disordered condition of the digestive organs. Psoriasis and lichen agrius frequently occur during the progress of gout and urinary diseases; and the hereditary nature of certain diseases, as lepra, psoriasis, lichen, &c., is beyond all doubt."—P. 4-6.

With these general views we entirely coincide, as well as with the judicious observations made by the author on the necessity of an accurate diagnosis; for, as he says, "the treatment of a great many cutaneous diseases is but of secondary importance, compared with their differential diagnosis. Many of them will get well almost without any treatment, provided they are allowed to pursue their natural course; and, on the contrary, a mild and simple eruption, by being mistaken, from a similarity of external appearances, for one of a severe and rebellious character, and treated accordingly, may be aggravated and prolonged for an indefinite period."—Pp. 74-5. We are pleased also to find Dr Burgess intimately acquainted with the researches of those histologists who have done so much to elicit the structure of the skin, and that he coincides with them in considering favus, and certain other diseases, to depend upon cryptogamic vegetations (epiphytes) growing, not on the healthy skin itself, but in matters exuded upon it.

Our limits prevent us from following Dr Burgess through his account of every individual skin disease, but we can assure our readers that, for the most part, a very graphic and useful description of the symptoms, pathology, and diagnosis of each is given.

The treatment recommended is very superior to that generally
practised, and accords more with our own experience of what is
beneficial than that of most other writers.   This part of the work,
also, contains much that is new, and many suggestions for which
we are satisfied practical men will thank the author.   Among
other remedies, Dr Burgess speaks of phosphorus in the following
terms :—

" There is a remedy which exercises a powerful influence on the cutaneous ex-
halents, and which I can specially recommend in the treatment of the more rebel-
lious forms of diseases of the skin—namely phosphorus. My attention was first
directed to this remedial agent during the period of the cholera in 1832, and
I then found it successful, when every other remedy had failed, in several
cases of that disease, where the vital powers seemed exhausted, and the pa-
tient in the lowest stage of collapse.   In these cases, it appeared to act as a
violent stimulant, principally through the nervous system, accelerating the
circulation, and exalting the muscular irritability in the highest degree.   I
can now recommend it as one of the most valuable medicinal agents we possess
in those inveterate cutaneous diseases—leprosy, psoriasis, lupus—in which the
skin seems to adapt itself to the morbid condition, which it retains with sin-
gular tenacity against all the usual methods of treatment.
" The *phosphorous* treatment of these maladies may be either internal or
external. The best method of administering the remedy internally is dissolved
in oil or ether, and the phosphorated oil or ether then mixed up with powdered
gum arabic and mint water. Camphorated lard is the most appropriate
vehicle for applying phosphorus externally. Its energetic revulsive proper-
ties may likewise be turned to account in certain diseased conditions of the
skin. Phosphorus, the iodide of arsenic, cantharides, and the biniodide of
mercury, are the most powerful internal remedies for skin diseases we
possess."—Pp. 16, 17.

Part Third.

CLINICAL REPORTS, LECTURES, ETC.

CLINICAL MEDICINE.—PROFESSOR BENNETT.

ON SIMPLE, CANCEROUS, AND TUBERCULAR EXUDATIONS—THEIR PATHOLOGY AND
GENERAL TREATMENT.

GENTLEMEN,—There are three varieties of exudation, which, occurring as
they do in one or other of the textures, occasion the great majority of those
diseases we shall be called upon to treat. A knowledge of the manner in
which these are produced, the characters of each, their specific differences and
natural progress, constitute the foundation of modern rational medicine. I
propose, then, describing them to you generally, before directing your atten-
tion to the special peculiarities they present in individual cases.
The term exudation has been introduced into pathology, not only to express
the act of the liquor sanguinis passing through the vascular walls, but to deno-

minate the fibrinous portion of the liquor sanguinis itself, when it has coagu-
lated on the surface, or in the substance of any tissue or organ of the body.
This term meets a difficulty which morbid anatomists have long experienced;
and hence it has of late years been extensively used to signify various kinds of
morbid deposits. Thus it has been applied to all those processes hitherto
termed inflammatory, tubercular, and cancerous; to all kinds of tumour and
morbid growth, and what has been called melanosis and typhous deposit. It
is often the cause of many concretions, and frequently constitutes the soil for
parasitic vegetations or cryptogamic plants of a low type, which communicate
essential characters to certain diseases. Indeed exudation, as a morbid pro-
cess, comprises the greater part of organic, as distinguished from functional
diseases; of lesions of nutrition, as separated from lesions of innervation.

    I. EARLY PHENOMENA OF EXUDATION.—Exudation in every case results from
a previous series of changes which has taken place in the capillary vessels,
and blood contained in them. These changes, as we are enabled to follow
them in the transparent parts of animals under the microscope, are seen to oc-
cur in the following order:—1st, The capillary vessels are narrowed, and the
blood flows through them with greater rapidity. 2d, The same vessels be-
come enlarged, and the current of blood is slower, although even. 3d, The
flow of blood becomes irregular. 4th, All motion of the blood ceases, and the
vessel appears fully distended. 5th and lastly, The liquor sanguinis is exuded
through the walls of the vessel, sometimes accompanied by extravasation of
blood corpuscles, owing to rupture of the capillaries.
    The first step in the process, viz., narrowing of the capillaries, is readily de-
monstrated on the application of acetic acid to the web of the frog's foot. If the
acid be weak, the capillary contraction occurs more slowly and gradually. If it be
very concentrated, the phenomenon is not observed, or it passes so quickly into
complete stoppage of blood, as to be imperceptible. Although we cannot see these
changes in man under the microscope, certain appearances indicate that the
same phenomena occur. The operations of the mind, for instance, as fear and
fright, and the application of cold, produce paleness of the skin; an effect
which can only arise from contraction of the capillaries, and a diminution of
the quantity of blood they contain. In the majority of instances, also, this
paleness is succeeded by increased redness, the same result as follows from di-
rect experiment on the web of the frog's foot, constituting the second step of
the process. In other cases, the redness may arise primarily from certain
mental emotions, or from the application of heat. In either case it depends
on the enlargement of the capillaries, and the greater quantity of blood they
contain.
    The variation in the size of, and amount of blood in, the capillaries, is
conjoined with changes in the movement of that fluid. Whilst the vessels are
contracted, the blood may be seen to be flowing with increased velocity. After
a time the blood flows more and more slowly, without, however, the vessel be-
ing obstructed: it then oscillates, that is, moves forwards and backwards, or
makes a pause, evidently synchronous with the ventricular diastole of the
heart. At length the vessel appears quite distended with yellow corpuscles,
and all movement ceases.
    Again, these changes in the movement of the blood induce variations in the
relation which the blood corpuscles bear to each other, and to the walls of the
vessel. In the natural circulation of the frog's foot, the yellow corpuscle may
be seen rolling forward in the centre of the tube, whilst on each side a clear
space is left, only filled with liquor sanguinis, and a few lymph corpuscles.
There are evidently two currents, the centre one very rapid, that at the sides
(in the lymph spaces, as they are called), very slow. The coloured corpuscles
are hurried forward in the first, occasionally mixed with some lymph corpus-
cles. These latter, however, may frequently be seen clinging to the sides of
the vessel, or slowly proceeding a short distance down the tube in the lymph

space, and then again stopping. Occasionally they get into the central tor-
rent, when they start off with great velocity, and accompany the yellow
corpuscles. It has been said that these corpuscles augment in number, accu-
mulate in the lymph spaces, and obstruct the flow of blood. In young frogs
their number is often very great; but then they constitute a normal part of
the blood, and in no way impede the circulation. In old frogs, on the other
hand, all these, and subsequent changes, may be observed, without the pre-
sence of colourless corpuscles. When the capillaries enlarge, however, the
central coloured column in the smaller vessels may be seen to enlarge also, and
gradually approach the sides of the tube, thus encroaching on the lymph
spaces. The slower the motion of the blood, the closer it comes, until at
length the coloured corpuscles come in contact with the sides of the vessel,
and are more or less compressed and changed in form. At length the vessel is
completely distended with coloured corpuscles, the original form of which can
no longer be discovered, and the tube appears to be filled with a homogeneous
deep crimson fluid. This is congestion. If the morbid process continue, the
vessel may burst, causing hemorrhage, or the serum and liquor sanguinis may
transude through its walls, without rupture, into the surrounding texture.
This is exudation.
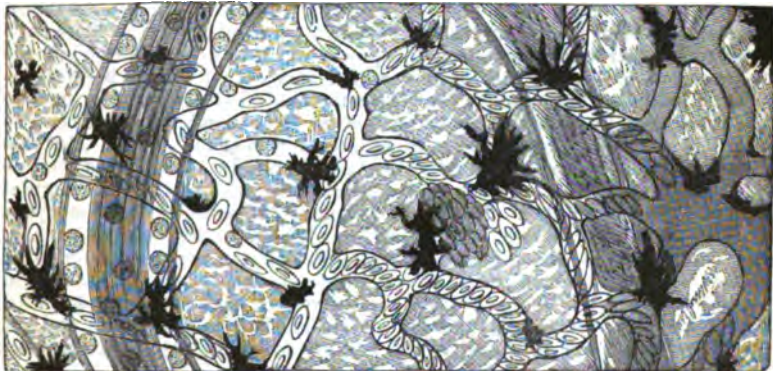
PORTION OF WEB OF THE FROG'S FOOT, VIEWED WITH A MAGNIFYING POWER OF 250 DIAMETERS —
On the left of the figure the circulation is natural; in its middle portion the column of blood is os-
cillating, and the corpuscles crowded together; on the right the circulation has stopped, and exu-
dation has taken place. About the centre hemorrhage has occurred, owing to laceration of a
capillary vessel.

II. THEORY OF EXUDATION.—It is of the utmost importance in pathological in-
quiries to separate facts from theories. Our facts may be correct, although the
conclusions derived from them are wrong. This proposition, however gene-
rally admitted, is seldom acted on in medical inquiries, in which we find fact
and hypothesis so mingled together, that it often requires considerable critical
and analytical power to separate one from the other. We are, however, in all
cases, insensibly led to theorise—that is, to attempt an explanation of the phe-
nomena observed, in order that we may derive from them some general prin-
ciple for our guidance. Such speculation is always legitimate, so long as we
consider opinions to be mere generalisations of known facts, and are ready to
abandon them the moment other facts point them out to be erroneous. The
phenomena of exudation, previously described, may easily be demonstrated—
they constitute the *facts*. Let us now examine how they have been attempted
to be explained—in other words, what is the *theory*.

1. The contraction and dilatation of the capillaries is explicable, by suppos-
ing them to be endowed with a power of contractility analogous to that

existing in non-voluntary muscles. John Hunter thought they were muscular, from the results of his observations and experiments; and they may be shown by the histologist to consist of a delicate membrane, in which permanent nuclei are imbedded. In structure, then, they closely resemble the muscular fibres of the intestine, and we know that, like them, they may be contracted or dilated by emotions of the mind, or by local applications. The narrowing of these tubes, therefore, may be considered, as Cullen thought it was, analogous to spasm, while their dilatation is similar either to the relaxation which follows such spasm, or to muscular paralysis.

2. The rapid and slow movement of the blood is explicable on the hydraulic principle, that when a certain quantity of fluid is driven forward with a certain force through a tube, and the tube is narrowed or widened, while the propelling force remains the same, the fluid must necessarily flow quicker in the first case and slower in the second. It has been supposed, from the throbbing of large vessels leading to congested parts, that they pump a larger quantity of blood than usual into them. This was called " determination of blood," by the older pathologists, but is now known not to be a cause, but a result, of the changes going on in the capillary vessels. The oscillatory movement, seen in the transparent parts of small animals, has not been seen to exist in man, and probably depends, in the former, on a weakened power of the heart.

3. It is the stoppage of the blood, and exudation of the liquor sanguinis, however, which it is most difficult to explain; for why, so long as there is no mechanical obstruction (and during this process none has ever been seen) should the circulation through the capillaries of a part cease ? It has been endeavoured, indeed, of late years, to establish a mechanical obstruction, by supposing the formation of colourless corpuscles, in large numbers, which cling to the sides of the capillaries, and so cause interruption of the stream. But this hypothesis is negatived by the following facts :—1st, In young frogs the vessels may be seen to be crowded with colourless corpuscles, while the circulation is in no way affected. 2d, In old frogs, oscillation and gradual stoppage of the stream may be seen, without any colourless corpuscles being present. 3d, The colourless corpuscles, as shown by Remak, are increased, after large venesections, in the horse, without ever causing active congestion. And 4th, Cases have occurred in man, where all the vessels have been crowded with colourless corpuscles, associated with hypertrophied liver and spleen, and yet no active congestion in these vessels, nor exudation of any kind, has been occasioned.

We cannot ascribe the stoppage of the circulation in the capillaries to venous obstruction, or to mechanical pressure of any kind, because all observation proves that such causes, while they induce effusion of serum, never occasion exudation of liquor sanguinis. We are compelled, therefore, to ascribe the vital force producing these changes, not to anything residing in the blood, or in the vessels, but to the tissues which lie outside the vessels. Whether we give to this force the name of attraction, or whether we consider it a modification of the power which, in a state of health, attracts nutritive materials from the blood, is of little consequence—such seems to be the only active agency to which we can ascribe the approach of the coloured particles to the capillary walls, and the passage through them of the exudation.
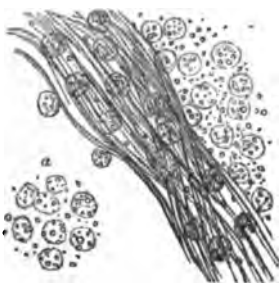
III. RESULTING PHENOMENA OF EXUDATION.—When the liquor sanguinis is exuded, it generally coagulates, and constitutes a foreign body in the texture of the parts affected, which it becomes the object of nature either to remove from the system, or so to modify that its presence may be rendered conducive to the wants of the economy. In order to accomplish this, two kinds of changes may take place—1st, The exudation serves as a blastema, in which new vital structures originate and are developed; 2d, It exhibits no power of becoming organised, and the exuded matters, together with the textures involved in them, die. In the former case corpuscles spring up in the exudation,

which differ in form, size, constitution, and power of further development, and give rise to those various appearances and changes which in some cases have been denominated the result of inflammation, in others various kinds of deposits.

We find that the peculiar constitution of the blood, or the general vital power of the organism, exercises a very powerful influence on the development of the exudation. This has been long recognised by pathologists in certain conditions, denominated respectively diathesis, dyscrasia, or cachexia. I propose at present to direct your attention to some of the facts connected with exudation as it occurs in the body during health, as well as when connected with scrofulous and cancerous constitutions. I shall call the former *simple* exudation, as distinguished from what may be denominated *tubercular* and *cancerous* exudations.

1. *Simple Exudation* presents four principal forms—(a) As it occurs on serous membranes, when it exhibits a finely fibrous structure, and has a strong tendency to be developed into molecular fibres ; (b) As it occurs on mucous membranes, or in areolar tissue, when it is generally converted into pus corpuscles; (c) When it occurs in dense parenchymatous organs, such as the brain, where it assumes a granular form, and is associated with numerous compound granular corpuscles; (d) As it is poured out after wounds or injuries, and occurs on granulating sores. In these cases the superficial portion is transformed into pus corpuscles, while that deeper seated is converted, by means of nuclei and cells, into nucleus and cell fibres, which ultimately form the cicatrix.

(a) On examining the minute structure of the exudation on a serous surface when recently formed, and when it presents a gelatinous semi-transparent appearance, it may be seen to be made up of minute filaments mingled with corpuscles. The filaments are not the result of the development of either a nucleus or a cell, but are formed by the simple precipitation of molecules, which arrange themselves in a linear manner, in the same way as they may be seen to form in the buffy coat of the blood. As the exudation assumes firmness, the filaments become more distinct and consolidated, and vary from $\frac{1}{3000}$th to $\frac{1}{500}$th of a millimetre in diameter. Bundles, or different layers of them, often cross each other. As the lymph becomes older, they assume more and more the character of those in dense fibrous tissue. The corpuscles, when newly formed, are delicate and transparent, but in a short time become more distinct, and are then seen to be composed of a distinct cell wall, enclosing from three to eight granules. They vary in size from $\frac{1}{100}$th to $\frac{1}{75}$th, and the enclosed granules from $\frac{1}{300}$th to $\frac{1}{500}$th of a millimetre in diameter. On the addition of water and acetic acid, the corpuscles undergo no change, although sometimes the latter re-agent causes the cell wall to contract and thicken ; and at others, to be somewhat more transparent. I

Molecular fibres and plastic corpuscles in lymph from a serous surface. *a,* the latter, after the addition of acetic acid.

have been in the habit of calling these bodies *plastic* corpuscles, from the frequency of their occurrence in plastic lymph. By Valentin and others, they have been named *exudation* corpuscles ; and by Lebert, *pyoid,* from their resemblance to pus.

(b) Exudation poured out on a mucous membrane sometimes presents a fibrous mass, as in cases of croup and diphtheritis, but more generally it passes into an opaque, unctuous, straw-coloured fluid long known under the name of pus. When poured into the meshes of the areolar tissue, the same transformation occurs, constituting an abscess. On examining the minute structure of pus,

it is seen to be composed of numerous corpuscles floating in a clear fluid. These corpuscles are perfectly globular in form, and vary in size from the $\frac{1}{100}$th to the $\frac{1}{75}$th of a millimetre in diameter. Their surface is finely granular. They have a regular well-defined edge, and roll freely in the liquor puris upon each other. On the addition of water, they become much increased in size, their finely granular surface disappears, and they become more transparent. Weak acetic acid partially, and the strong acid completely, dissolves the cell-wall, and brings into view an included body, generally composed of two or three granules close together, and rarely of four or five, each with a central shadowed spot. These are usually about the $\frac{1}{400}$th of a millimetre in diameter.

Pus cells. *a*, fully formed; *b*, the same after the addition of acetic acid; *c*, liberated nuclei—ordinary pus corpuscles; *d*, the same after the addition of acetic acid.

In some cases the pus corpuscles now described are surrounded by a distinct though delicate cell-wall. The cell so formed is about the $\frac{1}{50}$th of a millimetre in diameter, and is highly elastic, assuming different shapes, according to the degree and direction of the pressure to which it is subjected. Water and acetic acid cause the cell-wall to be at once dissolved, whilst the nucleus, which, before the addition of re-agents, exactly resembles an ordinary pus corpuscle, exhibits the usual body composed of two or three granules. What have hitherto, therefore, been called pus corpuscles, are the nuclei of cells, the delicate walls of which have been dissolved.

(*c*) In parenchymatous organs, the exudation insinuates itself among the elementary tissues of which they are composed, so that when it coagulates, these are imprisoned in a solid plasma, like stones in the mortar of a rough cast wall. The whole then constitutes a firm mass, giving increased density to organs, a circumstance well observed in the lung, where, however, a mucous surface extensively prevails, and where the exudation is commonly transformed into pus. In the brain and spinal cord, we find it to be deposited in the form of minute molecules and granules, which are frequently seen coating the vessels externally, and filling up the inter-

Granular exudation, and compound granular masses, from cerebral softening.

vascular spaces. The granules vary in size from the $\frac{1}{810}$th to the $\frac{1}{550}$th of a millimetre in diameter. They always contain among them round transparent globules, varying in size from the $\frac{1}{300}$th to the $\frac{1}{150}$th of a millimetre in diameter. These are the nuclei of round or oval cells which may frequently be observed in various stages of development. When fully formed, they vary greatly in size, for the most part measuring from the $\frac{1}{50}$th to $\frac{1}{35}$th of a millimetre in diameter. They sometimes contain a few granules only, at others they are so completely filled with them, that they assume a brownish-black appearance. Water and acetic acid cause no change in them, although the latter re-agent on some occasions renders the cell-walls more transparent. They are immediately soluble in ether, and break down into a molecular mass on the addition of potash and ammonia. These are compound granular cells. Masses of these granules may be occasionally seen floating about, of irregular shape, without any cell-wall. They are produced either by the solution of the cell-wall in which they were contained, or from the separation, or peeling off, of such masses from the external wall of the vessels. These are compound granular masses.

The granules, masses, and cells just described are found in the colostrum secreted by the mammary glands; in the exudative softening of parenchyma-tous organs; on the surface of granulations and pyogenic membranes; in the pus of chronic abscesses, combined with cancerous, tubercular, and all other forms of exudation; in the tubes of the kidney when affected with Bright's disease; and in the contents of encysted tumours. Reinhardt and Virchow have shown that they indicate a fatty degeneration, and that there is no form of cell-growth, whether healthy or morbid, that may not, under certain conditions, accumulate fatty granules in its interior, become a compound granular corpuscle, and thus be rendered abortive.

(*d*) If a recently formed granulation on the surface of a healing sore be examined, numerous cells will be observed, of various shapes, and in different stages of development. Some are round, others caudate, spindle-shaped, elongated, or splitting into fibres, as originally described by Schwann. In many cases there may be seen a number of free nuclei, imbedded in a slightly fibrous blastema, elongating at both ends, becoming fusiform, and splitting up the surrounding exudation, as described by Henle. Not unfrequently the nuclei may be seen developing themselves into elastic fibres, in the same exudation

Two vessels coated with exudation from spinal softening. Compound granular cells may be seen forming in it.

containing cells that are passing into white fibres. Indeed, the process of cicatrization in its various stages, and in different tissues, offers the best means of studying the manner in which nucleus and cell fibres are respectively formed.

Cells developing themselves into fibres   Nuclei developing themselves into fibres.

As these fibres are developed in the deeper layers of the exudation, the superficial ones are converted into pus-corpuscles, and after having served to protect the more permanent growths, are thrown off in the form of discharge. When the fibrous structure becomes more consistent and dense, the amount of pus diminishes, and a greater tendency is manifested by the exudation to pass into permanent tissue. At length pus ceases to be developed; the whole remaining exudation is transformed into fibres; a new surface is produced, which, after a time contracting, forms the permanent cicatrix.

2. *Cancerous Exudation* presents three principal forms, which are dependent on the relative amount and arrangement of the cells and fibres formed in it. (*a*) The structure is very hard, and is principally formed of fibres (*scirrhus*). (*b*) The structure is soft, containing a copious milky fluid, in which numer-

ous corpuscles swim (*encephaloma*). (*c*) The structure has a fibrous basis, so arranged as to form areolœ or loculi, containing a gelatinous gum or glue-like matter (*colloid cancer*).

(*a*) *Scirrhus* presents to the naked eye a whitish or slightly yellowish tinge; is dense and hard to the feel, and offers considerable resistance to, and often crunches under, the knife. On making a thin section of the growth, it is seen to be principally composed of filaments, which vary in size, and run in different directions, sometimes forming waved bands, at others an inextricable plexus, among which, however, nucleated cells may be seen to be infiltrated. Occasionally the fibrous structure forms loculi or cysts, enclosing similar cells.

Elastic fibres, cells, and the latter after the addition of acetic acid, from scirrhus of the rectum.

The so-called *cancer-cells* may be round, oval, caudate, spindle-shaped, oblong, square, heart-shaped, or of various indescribable forms, from pressure on their sides. In size they may vary from the $\frac{1}{100}$th to the $\frac{1}{10}$th of a millimetre in diameter; but in scirrhus, they usually measure from the $\frac{1}{50}$th to the $\frac{1}{30}$th of a millimetre in diameter. The cell-wall, when young, is smooth and distended; when old, it is more or less corrugated and flaccid. Each cell contains at least one nucleus, often two, and sometimes they increase in number from three to nine. Most commonly there is only one, which is round or oval, generally the latter, and contains one or two granules or nucleoli. The nucleus, like the cell itself, varies in size, and may occupy from one-sixth to four-fifths of its volume; between the nucleus and cell-wall there is a colourless fluid, which, at first transparent, becomes afterwards opalescent, from the presence of molecules and granules. On the addition of water, the cell-wall becomes distended by endosmosis, and is enlarged. When acetic acid is added, the cell-wall is rendered
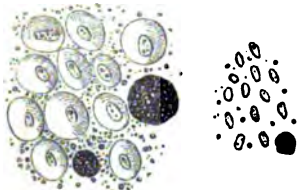
Young cancer cells before and after the addition of acetic acid.
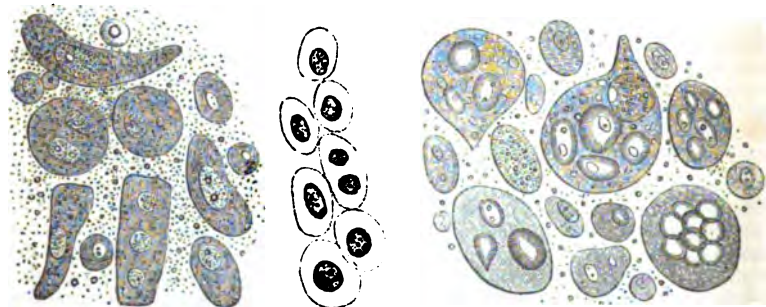
Older cancer cells before and after the addition of acetic acid.

Advanced cancer cells, including secondary cells.

more transparent, and in young cells is entirely dissolved, whilst the nucleus, on the other hand, either remains unaffected, or its margin becomes thicker, and its substance more or less contracted.

(*b*) *Encephaloma* also presents a fibrous texture, which, however, is very loose when compared with that of scirrhus. In the denser parts of the growth, indeed, it closely resembles that form of cancer; but where it is pulpy and broken down, often no traces of fibres, or at most some fragments of them, are visible.
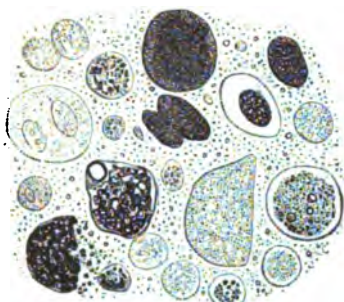
Cancer cells containing pigment, in malignant melanosis.

The whitish cut surface is often more or less mottled with a greyish, pinkish, reddish, yellowish, or black colour. The two first are owing to different degrees of vascularity. The reddish spots are owing to extravasations of blood, of greater or less extent ; and these, when very large, constitute what has been called by some surgeons *fungus hœmatodes*. The yellowish colour, when it surrounds bloody extravasations, is owing to imbibition of their colouring matter ; but when reticulated over the surface, or collected in masses, it is generally dependent on fatty degeneration of the cancerous tissue, and forms the cancer reticulare of Müller. The yellow matter is usually of cheese-like consistence, friable, and often resembles tubercle, for which it has been mistaken. The blackish tinge is owing to black pigment which may be infiltrated among the cancerous elements, and exist within the cells, constituting the malignant melanosis, or melanic cancer, of authors.

A small portion of the cream-like fluid, examined with a microscope, always presents a large number of the cancer cells formerly described, which in some

Cancer cells before and after the addition of acetic acid, also the structure of the reticulum from encephaloma of the testicle.

specimens of encephaloma reach a higher degree of development than in other forms of cancerous growth. These are mingled with a large number of molecules and granules, compound granular cells, blood corpuscles, and more or less of the fibrous element. The fibrous structure is the same as that in scirrhus, but the filaments are often finer, and always more widely separated ; while the pulpy matter and cells contained in the interstices are correspondingly increased, The yellow reticulum is sometimes composed of loose granules and compound granular cells, at others of granules alone. Not unfrequently it contains nuclei, disintegrated and altered in shape. In some instances the encephaloma is more or less impregnated with irregular masses of mineral matter, and occasionally almost entirely converted into a calcareous substance.

(*c*) *Colloid cancer* consists of a fibrous structure so arranged as to form areolæ or loculi, which are filled with a grey or amber coloured glutinous matter, sometimes transparent, at others opalescent or semi-opaque. This matter is occasionally found quite structureless, or exhibits only a finely molecular appearance. Under these circumstances the term *colloid tissue* has been applied to it. At other times numerous nucleated cells, presenting all the characters of cancer cells, in various stages of development, are found in it as a blastema; and we observe that the growth has a tendency to spread. This is colloid cancer, which, when it is formed on a free surface, as on the peritoneum, often presents small grains of a grey colour, resembling coagulated gum-arabic. When collected in masses, these have an irregular nodulated aspect. I have never seen the fibrous structure of colloid contain permanent nuclei, or afford any evidence of being developed from nuclei or cells.
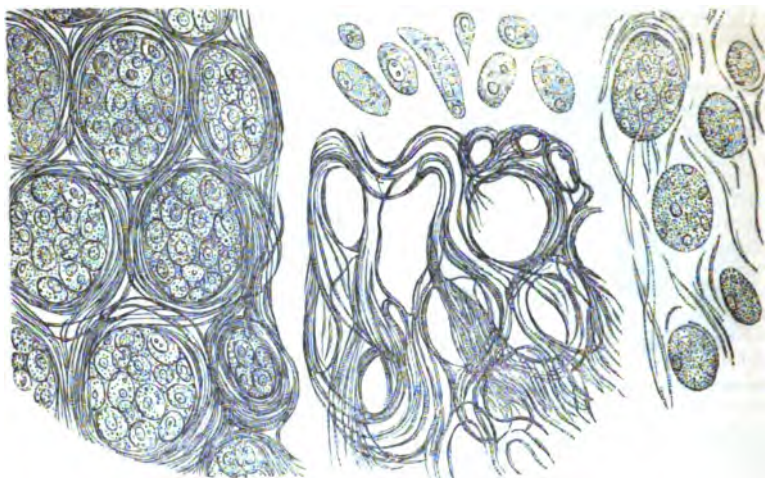
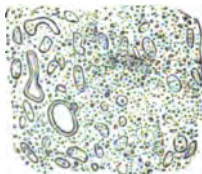Structure of colloid cancer before and after the addition of acetic acid.

All the three forms of cancer now described are vascular, but in different degrees. Scirrhus is least so, but is still rich in blood-vessels. Encephaloma is always very vascular, and often to such a degree, that it readily bleeds during life—(*fungus hæmatodes*). Colloid cancer is also well supplied with vessels, which ramify among the fibrous tissue. I have already stated that these forms pass into each other, and need only remark here, that this is often so gradual in many specimens, as to render their classification with either very¡ difficult. This is especially the case with scirrhus and encephaloma.

3. *Tubercular exudation* has been spoken of as presenting a miliary infiltrated or encysted form ; but these distinctions have no reference to structure, but merely to the extent and age of the exudation. It generally presents a yellowish or dirty-white colour, and varies in consistence from a substance resembling tough cheese to that of cream. Sometimes it is soft at one place, and indurated at another. On section, when tough, it presents a smooth or waxy, and when soft, a slightly granular surface. On pressure it is friable, and may break down into a pulpy matter, but never yields a milky juice.

A small portion squeezed between glasses, and examined under the microscope, presents a number of irregular shaped bodies approaching a round, oval, or triangular form, varying in their longest diameters from the $\frac{1}{120}$th to $\frac{1}{75}$th of a millimetre. These bodies contain from one to seven granules, are unaffected by water, but rendered very transparent by acetic acid. They are what have been called tubercle corpuscles. They are always mingled with a multitude of molecules and granules, which are more numerous as the tubercle is more soft. Occasionally, when softened tubercle resembles pus,

Tubercle corpuscles, with and without acetic acid, from the lung.

Tubercle corpuscles, granules, and debris, from the brain.

constituting scrofulous purulent matter, we find the corpuscles more rounded, and approaching the character of pus cells. They do not, however, on the addition of acetic acid, exhibit the peculiar granular nuclei of these bodies.

The gray granulations described by Bayle may be seen on careful management of the light, after the addition of acetic acid, to contain similar bodies to those described as tubercle corpuscles, closely aggregated together, with their edges very indistinct, and containing no granules.   Cutaneous and calcareous tubercles, on the other hand, contain very few of these bodies, mingled with numerous irregular masses of phosphate of lime, and a greater or less number of crystals of cholesterine.

IV. PATHOLOGY OF THE THREE KINDS OF EXUDATION.—We have seen that the liquor sanguinis transudes through the coats of the capillaries, and, coagulating outside the vessels, constitutes an exudation more or less solid.   Much of the serum which accompanied it is rapidly absorbed, but what remains constitutes a blastema, which becomes, as has been described, organised in various ways, according to the seat and nature of the exuded matter.   In simple exudation we observe differences according as it is poured out on a serous, mucous, or granulating surface, or into a dense parenchyma.   These differences are certainly owing to the seat of the exudation.   But in cancerous or tubercular exudations, we observe no such distinctions, although it has been observed that fibrous cancer or scirrhus is most common in fibrous organs, and cell cancer or encephaloma is most common in cellular organs.   The most important characters of the three kinds of exudation may be shortly stated as follows :—

We observe in a simple or inflammatory exudation, that it may occur at all epochs in life ; that it may attack all tissues, and most commonly those which are very vascular; that it may be poured out in large or small quantities ; and that it may occur with greater or less rapidity—hence the terms acute and chronic.   We further observe, that the acute exudations are generally attended with symptoms of a peculiar character (inflammatory), and have a great tendency to cell or temporary formations, which rapidly break down, are absorbed and excreted by the emunctories : that the chronic exudations, on the other hand, have a tendency to fibrous or permanent formations, producing adhesions, strictures, hypertrophies, &c.

We observe, in a cancerous exudation, that it occurs for the most part in persons of adult or advanced life ; that it may also occur in all tissues, but is by far most common in glandular or fatty organs, such as the liver or female mamma, and is very apt to attack the lymphatic glands *secondarily* ; that its progress, although sometimes slow when very fibrous, becomes rapid when corpuscles abound in it ; that there is a great tendency to the formation of most perfect forms of cell life, which have the power of self-development, and thereby spreading to neighbouring tissues ; and lastly, that when, by pressure, ulceration is produced on free surfaces, it bursts through these in exuberant fungoid excrescences.

We observe, in a tubercular exudation, that it occurs for the most part in young subjects, between the periods of dentition and of adult age ; that it may also occur in all tissues, but is by far most common *primarily* in the lymphatic glands, and afterwards in fibrous or albuminous textures, as the lungs and serous surfaces ; that its progress is generally exceedingly slow ; that there is no tendency to perfect cell formation, but rather to abortive corpuscles, which form slowly, and slowly break down ; that there is little tendency to absorption, but great liability to disintegration and ulceration ; and finally, that the local changes are almost always preceded by derangement of the primæ viæ, and a group of symptoms known under the name of dyspepsia.

Taking, then, the products of simple inflammation (say pus) as a standard, we cannot fail to remark, that whilst the cell development of tubercle is below, that of cancer is above, this standard.   Of the three kinds of exudation, tubercle is the lowest, and cancer the highest, in the scale.

On what this difference in the formative power of the exudation depends, we are ignorant, but every kind of reasoning must lead us to the conclusion, that these different changes and effects depend not upon the vascular system, which

is the mere apparatus for the production of exudation; not upon the nervous sys-
tem, which leads to the necessary arrangement of that apparatus for the purpose;
and not on the texture, which is the seat of the exudation, as that varies, whilst
the cancerous or tubercular formation is the same—but in the inherent com-
position or constitution of the exudation itself. On this point most pathologists
are agreed, and hence the supposed existence of various kinds of dyscrasiæ,
originating in the blood, which it is imagined explain the different results pro-
duced. But here pathologists pause—once traced back to the blood, they are
content; and they have not sufficiently taken into consideration, that the blood
itself is dependent for its constitution on the results of the primary digestion
in the alimentary canal on the one hand, and the secondary digestion in the
tissues on the other. Yet it must be evident to every physiologist, that if it be
the constitution of the blood which determines the constitution of the exuda-
tion, the causes which produce this must be sought in those circumstances
which operate on the composition of the former fluid.

Now, numerous facts, to which I shall allude on some future occasion, render
it probable that while the blood is normal in simple exudation, it contains an
excess of nutritive materials in cancerous, and a deficiency of them in tuber-
cular, exudation. These are points, however, which can only be established
after examining instances of such exudations in detail. But it must not be for-
gotten, in the meantime, that as the blood is continually undergoing changes, is
receiving and giving off new matters, it can scarcely happen that it remains
the same for many hours together. An exudation at one time may be very
different from that at another. At one period it may abound in elements which
do not exist in it at the next. Hence it may often happen that a concurrence
of circumstances is necessary to occasion a certain result. A cancer once formed,
may remain local until such a concurrence of events arises, comprising, first, a
peculiar constitution of the blood, secondly, the phenomena leading to and pro-
ducing an exudation, and thirdly, the occurrence of this exudation in some
other tissue or organ sufficiently predisposed for the purpose. Hence why the
histologist is continually finding all kinds of intermediate formations between
the three leading kinds of exudation, and why, even when the constitution is
thoroughly cancerous or tubercular, simple exudations may be poured into
tissues as the result of recent wounds or injuries.

The final termination of either kind of exudation may be the same, only each
has its peculiarities. We have noticed the tendencies of simple exudation to
be transformed into pus or fibres, according to its seat. In the former case, the
pus cells break down, and are re-absorbed in a disintegrated and fluid condition
into the blood; in the latter, permanent fibrous tissue is produced, constituting
chronic adhesions or cicatrices. The cells of a cancerous growth may also de-
generate or decay, but this rarely takes place throughout the whole structure.
But it is not uncommon to find in certain encephalomatous tumours, yellow
matter either in masses or reticulated through its substance—(*Cancer Reticulare
of Müller*). This is generally owing to fatty degeneration of the cancer cells.
The fibrous structure of cancer may also increase, and occasionally produce cica-
trization. Tubercle possesses no such fibrous stroma, which is almost always vas-
cular. This, indeed, is the reason why a cancerous tumour increases by growth,
which tubercle cannot be said to do; the former is vascular, the latter is not:
in the one, cells are formed which have the power of re-development, in the
other, no re-productive cells are produced. In cancer the morbid matter circu-
lating in the blood (whatever that is), is concentrated or attracted to the can-
cerous part, and should none afterwards be present, the healthy blood is made
subservient to the purpose of nourishing a foreign growth. In tubercle, succes-
sive fresh exudations only are made, which, by their accumulation, augment
the volume or amount of the morbid product.

All three forms of exudations may be rendered abortive by the animal matter
being broken down and absorbed, while the mineral matter remains, con-
stituting a cretaceous or calcareous concretion. This is not unfrequently

seen as the result of simple exudation ; is rare in cancerous, but very common in tubercular, exudation.

During the disintegration of simple, cancerous, and tubercular exudations, the animal matter broken down is again rendered fluid, re-passes into the blood, and then constitutes that excess of fibrine detected by chemists. The amount of this will, of course, vary according to the amount of the exudation and the activity of the disintegrating process. In the blood this effete matter probably undergoes chemical changes, preparatory to its excretion by the different emunctories, but more especially by the kidneys, in the form of various sediments. The resolution of simple exudation is generally accompanied by the presence of such urinary sediments, which indicate pretty clearly in what way, after it has passed through the phases of development described, it is at length discharged from the body. In the same manner the amount of these sediments frequently points out the extent of absorption going on in cancerous and tubercular exudations.

V. GENERAL TREATMENT OF EXUDATION.—The foregoing facts and considerations must lead us to the conclusion, that practically the medical man may be called upon, 1st, To prevent or diminish the extent of an exudation ; 2d, When it has coagulated, to further its removal from the economy ; or, 3d, If this cannot be accomplished, to render its products as little injurious to the system as possible. In each case, we can only proceed rationally by knowing the manner in which nature operates, and assisting those curative changes which she invariably attempts. We have seen that exudation follows certain preliminary alterations in the capillary vessels, and is immediately dependent on relaxation or paralysis of their coats, and transudation through them of the liquor sanguinis. Once formed, it passes through certain changes or developments, dependent on the texture in which it occurs, its amount, the rapidity with which it is formed, and its inherent constitution. Lastly, that the exudation, by means of these changes, is rendered soft, more or less disintegrated, and is absorbed into the blood, to be excreted from the economy. A correct treatment, therefore, will be influenced by the stage and nature of the exudation.

1. To prevent or diminish the extent of an exudation, we must adopt measures to overcome the dilatation of the capillaries, their distension with blood, and the attractive power (whatever that is) which draws the liquor sanguinis into the surrounding textures. This is accomplished—1st, By topical applications of cold and astringents, which stimulate the capillaries to contraction. 2d, By topical bloodletting, which, by drawing blood from the neighbourhood of the part, favours the onward flow of blood through the obstructed capillaries. 3d, By general bloodletting, which, by diminishing the quantity of blood in the system, is supposed to act indirectly in the same manner, as well as in favouring absorption of the exudation before it becomes organised. 4th, Soothing topical applications, such as warm fomentations, opiates, &c., which relieve the irritability of the nerves in the part, on which, hypothetically, the attractive force in the textures is supposed to depend. The indications for employing one or the other of these means, I shall discuss under the head of special cases.

2. When the exudation has coagulated, it constitutes a foreign body, which can only be removed by its becoming organised, or by its dying. In the one case it acts as a blastema, in which structures are developed that ultimately break it down, and render it capable of being absorbed, or converted into a tissue that becomes permanent. In the other case, it disintegrates slowly, constituting ulceration, or putrefies, forming gangrene, when it is separated from the economy in discharge or as a slough. It is by regulating the formative power of the exudation that we check or favour resolution ; and we can only do this by employing those means which lessen or advance growth in all living organisms. Thus, locally cold checks, and heat favours, growth ; and we

further observe that moisture, room for expansion, and locality, exercise considerable influence. Hence lotions favour, and pressure checks, organic development.

With a view of diminishing the general excitement that prevails, tartar emetic has been recommended, and to assist the absorption of the exuded matter, calomel is a favourite remedy ; but the manner in which these act has been disputed, and whether it be by producing an influence on the nervous system, as a solvent of the effete matters in the blood, or by stimulating the excretions, is yet undetermined. In the same way the action of counter-irritants, although undoubtedly useful in causing absorption of chronic exudations, is little understood, and belongs to the most mysterious department of therapeutics.

3. In order to favour the excretions of the effete matters in the blood, purgatives, diaphoretics, and diuretics, alone or combined, will be found very useful. The influence of these remedies, indeed, is not confined merely to removing matters which have been absorbed as the result of the secondary digestion ; but, by their depurating qualities, they favour indirectly the rapid absorption of the exudation.

4. In tubercular exudation, the organisation of which is imperfect, and leads to ulceration and wasting, we have to combat the preliminary phenomena of exudation locally, whilst we improve the nutritive powers of the economy generally. To meet the first indication, counter-irritation and an equable climate are useful ; whilst for the second, we must overcome the dyspepsia so hostile to a correct primary digestion, and supply the system with easily assimilatable animal oils, without which nutrition cannot proceed.

5. In cancerous exudations we must endeavour to restrain the advance of growth, by cold, dryness, and pressure ; attempt its eradication by excision, if this can be appropriately practised, and diminish the tendency to accumulation of nutritive materials in the system, by keeping the excretory functions in full activity.

The general indications for treatment now alluded to, of course admit of infinite variations and modifications in individual cases. In the meantime, what I have to tell you with respect to these, will, I think, be more readily comprehended from the preceding considerations.

SIMPLE EXUDATION IN THE LUNG (PNEUMONIA)—SHOULD VENESECTION BE PRACTISED IN SUCH CASES ?

CASE I.—John Foreman, æt. 54, a bookseller, and a stout plethoric individual, was admitted into the Clinical ward, November 30, 1849. He states that he has always enjoyed robust health until three days ago, when he was exposed to an unusual degree of cold by travelling in an open railway carriage. On his return home, he was seized with a violent rigor, which lasted some time, and was succeeded by slight febrile symptoms. He went to bed and slept, but was awakened by a dull gnawing pain in the left side, accompanied with cough and great difficulty of respiration. In the morning he attempted to go out to his work, but owing to weakness and soreness in his limbs, he was speedily obliged to return. His cough became worse, the pain more severe, and he expectorated brown-coloured matter. He had headache, loss of appetite, great thirst, and considerable dyspnœa. These symptoms continued until his admission. At the visit on the following day (December 1st), he complained of pain on the left side of chest, most severe under the left nipple, and increased on taking a full breath. He has constant cough, and copious expectoration of a tenacious, viscid, rusty-coloured matter. On percussion, the right side of chest is everywhere clear and resonant. On the left side, the chest anteriorly is resonant above the nipple ; below this it is dull. Posteriorly, on the same side, percussion shows the lung to be resonant in its superior third, but the two inferior thirds are completely dull. On auscultation, the respiratory murmurs on the right side of chest are normal. On the left side, anteriorly and superiorly, the

breath murmurs are somewhat puerile, and inferiorly hoarse and tubular. In the external part of the mammary region, the respiratory murmurs are suppressed. In the axillary region there is a slight friction murmur ; posteriorly and inferiorly there is distinct crepitation. Over the lower two-thirds of this lung, especially posteriorly, there is loud bronchophony.   The pulse is 100, full and strong ; the cardiac sounds normal.   The skin is hot and dry.   The tongue is furred ; there is no appetite ; great thirst ; nausea and occasional vomiting ; bowels open ; micturition is natural, and the urine loaded with lithates.   ℞. *Antim. tart. gr. vj ; pulv. opii gr. iss. ; sacchari alb. ʒss. M. et divide in pulv. vj.   One to be taken every hour ; low diet.*   In the evening, it was found that during the afternoon he had been severely purged.   The breathing is now easier ; pain relieved ; pulse 96, soft.   *To omit the powders.*   ℞ *Vin. Ipecac. ʒij ; sol. mur. morph, ʒiiss; liq. ammon. acet. ʒij. ; aquæ. ʒvss. M. ft. mist. Two table-spoonfuls to be taken every four hours.*   On the next day (*December* 2), at the visit, the pain in chest is still severe, but the cough is easier, and the dyspnœa less urgent.   The friction sound has disappeared.   Crepitation is more abundant, and the tubular harsh murmurs are greatly diminished.   Expectoration still copious ; pulse 80, soft ; skin moist ; urine still loaded with lithates. *December 5th.*—Crepitation and dulness have now disappeared.   There is no pain or dyspnœa ; expectoration decreased in amount ; urine clear.   He was now convalescent.   On the 12th he was ordered a bottle of porter daily, and full diet.   On the 17th he was dismissed quite well.

CASE II.—Robert Hogg, æt. 18, a teacher, admitted December 10, 1849.   He states that, a fortnight ago, after unusual exposure to cold, he was seized with a severe rigor, followed by loss of appetite, thirst, pain in the head, and heat of skin. He was subsequently troubled with difficulty of breathing, aching pain in the chest, and cough, with a copious glairy expectoration of a rusty colour. About four days afterwards he was bled from the arm ; he was subsequently twice blistered, and was purged with marked benefit.   *One grain of tartrate of antimony was ordered by the clerk to be taken every two hours ; and the following morning two purgative pills.   December 12th.*—When carefully examined before the class, it was found that he complained of no pain in the chest, and had very little cough.   The expectoration was scanty, consisting of frothy muco-purulent matter.   He breathed easily, and the chest expanded tolerably well.   The report says, that on percussion there is distinct dulness on the right side, posteriorly.   Anteriorly the chest is resonant on both sides. On auscultation, tubular respiration is heard all over the right side, and the expiration is slightly prolonged.   The vocal resonance is increased on both sides, but especially on the right.   The pulse is natural ; skin moist.   The appetite is bad, and he feels nausea, apparently the effect of the mixture.   He complains of slight pain in the bowels, which are costive.   The urine is high coloured, but otherwise natural.   *Omit antimonial mixture.   To have a domestic enema.   December 13th.*—The dulness and vocal resonance on the right side are much increased.   Coarse crepitation is now also heard over the posterior and inferior part of right back.   In the evening, the bowels not having been opened, he was ordered a " black draught."   From this time until the 21st, he continued much in the same condition.   There is now considerable dulness on both sides of chest, posteriorly, with loud bronchophony, but no moist râles. *A blister 6 inches by 4, to be applied to the left side of chest.   December 22.*— Crepitation is to-day heard on both sides of chest, mingled with dry bronchial râles during expiration.   ℞. *Antim. tart. gr. xij. ; aquæ, ʒvi. ; M. ft. mist. ʒss. to be taken every four hours.   To have a calomel and opium pill in the evening. 23d.*—The medicines ordered yesterday have caused slight diarrhœa, which had disappeared on the 24th.   There are now loud mucous râles heard during inspiration, and sibilant râles with the expiration pretty generally over the chest. Expectoration is again copious, and tinged slightly of a rusty colour.   ℞. *Vin. Ipecac. ʒij. ; sp. æther. nit. ʒss. mist. scillæ. ʒv. M. ft. mist.   A teaspoonful to*

be taken three or four times a-day. On the 27th loud mucous râles are audible over the back of chest on both sides. Dulness on percussion and bronchophony continue. Expectoration copious—muco-purulent and tinged with blood. Pulse 120, weak ; skin hot ; great weakness. *To have ℥iv. wine daily. January 2, 1850.*—He has continued in the critical state mentioned at last report until to-day. *The wine has been increased to ℥viij. daily.* There is now an evident amendment ; the pulse is stronger, and the urine loaded with lithates. From this time convalescence commenced. For six days the urine continued to be loaded with lateritious sediment, the moist râles disappeared from the chest, and the expectoration diminished. He may now (January 22) be said to be nearly well. The chest is everywhere resonant on percussion. The natural breath-sounds are everywhere heard on the right side, mingled with an occasional sibilant râle during inspiration. The appetite is good, and he walks about the ward.

The two cases of pneumonia just described were similar in their origin, and attended with similar symptoms, up to the fourth day. The first, a strong man of fifty, then entered the Infirmary ; he was treated with tartar emetic and opium. Resolution of the exudation was completed on the 5th day, and he was discharged well on the 17th day. The second case was bled, blistered, and purged, before entering the Infirmary, which he did not do until the 14th day. Resolution commenced on the 23d, and was not completed until the 28th day, —and he is still in the house, weak, although convalescent (forty-one days after the attack).

Now, although it is very probable that these two cases were of different degrees of severity, and, although in the second case, exudation occurred in both lungs, whereas in the first it was confined to one, the histories of the two will, I think, show, that whereas, in Foreman, the disease ran its natural course towards a happy termination ; in Hogg, this was interfered with by the active treatment to which he had been subjected before entering the Infirmary. There is every reason to suppose, from the well-marked symptoms with which the disease commenced, that exudation had taken place on the fourth day, when he was bled, and although we do not know to what extent venesection was carried, we may easily imagine that it must have been considerable, for he expressed himself as having been much relieved by it. Such a bleeding, followed by purgatives, must have greatly diminished the vital power of the economy, and interfered with the formative tendency just at that moment when it was most required to transform the exudation into cell structures, in order that they might rapidly disintegrate it, and render it absorbable. In consequence, the necessary changes took place very slowly ; the respiratory organs were greatly embarrassed for a considerable time ; the exudation even extended itself, and it was only after a very critical period of six days, during which it was impossible to say whether the vital powers would rally, although they were assisted by stimulants, that resolution ultimately took place.

Of late years a remarkable revolution has taken place in the treatment of pneumonia. Formerly such cases were almost always bled, if the pulse was frequent and strong. Now, it has been satisfactorily shown, that these symptoms do not constitute a good guide to the treatment of the disease by bleeding. Patients seldom enter hospitals before the third or fourth day, by which time exudation has occurred to a considerable extent,—most commonly the disease is of much older standing—and the experience in these institutions is, that after bleeding the disease is very fatal, and the recovery, if it take place, unusually protracted. In private practice, medical men still occasionally find venesection useful. Now, why is this ? Some have asciibed it to a change of type of the disease ; others to the more active use of tartar emetic, and calomel, and opium. I am inclined to think that it depends on a more accurate knowledge of the physical signs of the disease, and a conviction that when hepatization has taken place, loss of blood is not favourable to its removal. The reason of this our previous observations on exudation will explain, for how,

if the vital power be suddenly and excessively lowered by an antiphlogistic treatment, can those new structures be produced whereby only resolution can be accomplished ? If, then, you be called to a case shortly after the rigor, when dyspnœa and pain in the chest are coming on, and *before* hepatization and bronchophony are well pronounced, you will still find, with proper precautions, that a good bleeding will strangle or cut short a pneumonia. But if the exudation has coagulated, as indicated by dulness on percussion, and increased vocal resonance, then bleeding, as a general rule, is more injurious than beneficial.

CANCEROUS EXUDATION OF THE LIVER, SIMULATING SCIRRHUS OF THE PYLORUS— CANCEROUS ULCERATION OF ŒSOPHAGUS—SIMPLE STRICTURE OF PYLORUS— PROFUSE HÆMATEMESIS—ANEURISM OF THORACIC AORTA, BURSTING INTO THE LEFT PLEURA.

Thomas Stewart, æt. 54, bookseller ; admitted November 28, 1849. States that about six years ago he had an attack of hæmoptysis, but with this exception, he has always enjoyed good health, till about four months ago. At that time his appetite began to fail, and he felt sick after eating ; occasionally vomiting his food. Since then the sickness has been increasing, and about three or four weeks ago, he began to vomit blood. He has also been affected with pain in the throat on attempting to swallow, and a sense of constriction in the œsophagus, opposite the superior border of the sternum. He states, that he can very seldom take food without exciting vomiting ; but occasionally, when he succeeds in retaining it for half an hour, the sense of sickness passes off. He further states, that he vomits blood mixed with clots of dark-brown masses. This does not occur after eating, but generally between three and five in the morning ; occasionally, however, it occurs during the day, and is then preceded by a fit of coughing. He states, that he has been losing flesh lately to a great extent, but was formerly of a stout and robust habit of body.

On admission, he appears pale and emaciated. Complains of great general weakness. Tongue much furred, and the superior surface fissured. Complains of pain and constriction on attempting to swallow. Is sick, and generally vomits after every meal, and this whether his diet be solid or fluid. Vomits a great deal of florid blood, mixed with dark grumous masses, and clots of a black colour. On examining this fluid under the microscope, it is seen to consist chiefly of blood corpuscles and epithelium scales ; no cancer cells can be detected. He states that on Friday last (Nov. 23), he vomited about half a gallon of blood, and on the following day even a larger quantity. There is great tenderness over the region of the stomach ; and on examination, a hard lobulated oval tumour is discovered on the right side of the epigastric region, measuring four inches transversly, and two inches from above downwards. The appetite is bad, and has been getting worse of late. Bowels usually regular. He complains of cough, which has existed for about four months ; no dyspnœa. On percussion, the chest sounds well, except that there is dulness over the lower third of the left lung posteriorly. On auscultation, the expiration is prolonged anteriorly, and crepitation is heard over the part where dulness is elicited on percussion. Pulse 90, of tolerable strength. Complains of occasional palpitation, and the impulse of the heart is somewhat increased ; but on auscultation, the heart's sounds are normal. Urine, sp. gr. 1020 ; natural in quantity ; not coagulable ; deposits, on cooling, an abundant lateritious sediment of lithate of ammonia. Complains of giddiness, and is unable to walk well, owing to weakness. *Ordered a purgative powder.* 29th—Bowels opened. *Four leeches to be applied over the tumour in epigastrium.*—℞. *Pulv. Opii gr. ij. ; Extract Hyoscyam. gr. xii. M. et divide in pil. iv. One to be taken morning and evening.—* ℞. *Napthæ Medicin.* ℨi. *Mist. Camphoræ,* ℨiij. *M. Half an ounce to be taken every three hours.* December 1st—Pain and tenderness are somewhat relieved by the leeches. Still vomits, but not to so great an extent as formerly. From this time he went on, with occasional exacerbations and remissions, but on the

whole becoming manifestly weaker.   Every now and then he vomited large quantities of florid blood, and on one occasion the quantity amounted to thirty-six ounces.   *Gallic acid* and *acetate of lead and opium* were given at these times.   After each attack of hæmatemesis, for some hours small quantities of blood came welling up into his mouth, and were expectorated.   On December 14th—It is noted that his weakness is increasing, and appetite diminishing, daily.   He was then ordered *eight ounces of wine daily, and beef tea enemata.* —17th, Extremely weak, and quite unable to take food, evidently sinking. 18th—Died this morning at four A.M.

Sectio-Cadaveris, December 19th, twenty-one hours after death.—The body was livid, and greatly emaciated.

On reflecting the integuments from the thorax and abdomen, a nodulated portion of the liver, nearly separated from the rest, very moveable, containing a large mass of cancerous exudation, and measuring four by two inches across, projected as a distinct tumour into the epigastrium, and was evidently the same swelling as had been felt during life, through the integuments.

Thorax.—The cavity of the left pleura contained about a pound-and-a-half of recently coagulated blood.   The pericardium contained about six ounces of clear straw-coloured serum.   Heart much contracted.   The whole of the thoracic viscera, together with the trachea, and great vessels, were removed *en masse.*   The blood in the pleura was then seen to have issued from between the lobes of the left lung, through a laceration of the pleura, at the external and back part of that organ.   The aorta being slit up, was found to be somewhat rough internally.   At the outer part of the arch, where it joins the descending aorta, the left side of the vessel was perforated by a nearly circular aperture, two inches in diameter, with smooth edges, which led into an aneurismal sac, the size of a large cocoa nut, filled with a soft coagulum.   The aneurismal sac pressed and encroached on the left lung inferiorly, and communicated with the pleural cavity through a recent ragged laceration in the pleura costalis, three inches in length.   The whole arch of aorta was slightly dilated ; the valves healthy.   Between the thoracic aorta and the œsophagus, there were two masses of glands, greatly enlarged from cancerous infiltration.   The œsophagus itself was ulcerated about its middle, and the enlarged glands before-mentioned projected into its cavity.   This ulceration surrounded the tube internally, and extended about three inches from above downwards, presenting a soft pultaceous surface, the result of disintegrated cancerous exudation.   The lung presented, throughout, a number of small irregular-shaped masses of exudation, not larger, in most instances, than four or five lines in diameter, and resembling masses of crude tubercle, but somewhat softer, and slightly redder in colour.   There were also one or two larger masses, nearly globular in form, from one-fourth to three-fourths of an inch in diameter, of soft consistence, yielding a cream-coloured juice, and marked with one or two red vessels and reddish points.   The bronchial glands were infiltrated with black matter, and mostly contained masses of cancerous exudation, similar to, but smaller than, those in the lung.   •

Abdomen.—The peritoneum covering the diaphragm, as well as that in the pelvis and several other places, showed fungus-like projections and nodules of irregular form—the largest two inches in diameter, flattened on their surface— of a yellowish white colour, mottled with numerous red vessels externally— internally of a similar colour—crossed by fibres, which included matter of the consistence and general appearance of boiled ground rice.   In the pelvic cavity, at its most depending parts, there were about two ounces of bloody pus and lymph, infiltrated with blood, and here and there disposed in small patches on the surface of the intestines and parietal peritoneum.   The liver was much enlarged, and weighed six pounds ten ounces.   It contained numerous nodular masses, which on the surface were cup-shaped.   The largest were nearly four inches across, and were usually softened in their centre.   On section, they presented the ordinary appearance of encephaloma of the liver, with the excep-

tion, that in many places their substance was partly diffluent, and on section excavations or cavities were left in the mass. Some of them contained a creamy yellowish fluid, mixed with red, and others olive-coloured serum, with a large amount of flocculent and granular pinkish debris. Here and there, also, masses of reticulum were infiltrated among the whitish and greyish cancerous exudation. The liver itself was pale fawn coloured and very fatty. The stomach was perfectly healthy; but there was a simple stricture at the pylorus, which with difficulty admitted the introduction of the little finger, and which depended on hypertrophy of the areolar tissue between the muscular and mucous coats. The intestines were extremely contracted; the colon not being above one-half inch in diameter. *Kidneys* pale, containing numerous small cysts. The epithelium, however, was nearly healthy, exhibiting under the microscope only a small quantity of granular matter. The mesenteric and lumbar glands were healthy.

During life, the pain in the stomach, the vomiting after food, the black bloody coagula rendered, and the distinct nodulated and somewhat moveable tumour in the epigastrium, left little doubt in the minds of all those who examined the case, that we had to do with cancer of the pylorus. On examination after death, however, the tumour which had previously been felt, was found to be a nodule of cancerous exudation developing itself in the liver, a part of which had been pushed forward so as to occasion the swelling. As the rest of the liver was entirely hid under the ribs, it was scarcely possible to have suspected this occurrence during life. The simple stricture, however, that really existed in the pylorus, conjoined with the pressure exercised by the tumour on the valve, caused the vomiting that formed the principal feature of the disease.

The appearance of the matters rendered by the mouth, proved that they must have come from the stomach; because, although a considerable quantity of red blood was evacuated, this was commonly mingled with rusty brown, and even perfectly black, coagula. Besides, on one occasion, he was actually seen by the clerk to render the blood by the act of vomiting; and the same thing was repeatedly observed by the nurse. At first, then, I considered that the cancer of the stomach had ulcerated internally, and poured out the blood evacuated; but, latterly, from the large quantities discharged, my suspicions were fixed on the presence of an aneurism pressing on the lung, and communicating with the trachea, in which case he must have swallowed the blood. This supposition seemed to be confirmed by the existence of limited dulness on the left side, and by crepitation, an almost invariable concomitant of aneurism so situated.

TUBERCULAR EXUDATION INTO THE LUNGS (PHTHISIS PULMONALIS)—DISEASED AORTIC VALVES—MUSICAL HEART-SOUNDS—ULCERATION IN THE LUNGS, CHECKED BY COD-LIVER OIL.

Patrick Barclay, æt. 15, admitted June 25th, 1849. His previous history indicated that he had been of scrofulous habit from infancy. He had attended school regularly until a week ago, but could not take much exercise on account of a sore leg, which originated, twelve months previously, in a fall. His diet has, for a long time, been very poor. On the 18th he was attacked with cough, and this has continued till admission. He also complains of dyspnœa, on exertion. On admission, he is excessively emaciated. He complains of cough, which is sometimes very prolonged, but has no pain, nor difficulty of breathing. The chest expands well on inspiration. Cough easily excited, and occasionally severe. Sputa viscid, frothy, and tinged with blood. On percussion, there is great dulness on the right side, especially under the clavicle; the left side is also dull to a slight extent. On auscultation, distinct bronchophony, loud friction râle, and mucous râle, approaching cavernous, are heard in the upper right side, in front; and these become more faint towards the lower part of the lung. On the left side, friction râles are also heard in the upper part in front. Behind, on the right side, vocal resonance, not so distinct, but

râles the same as in front. Pulse 114, strong and sharp. The heart's apex beats below sixth rib ; impulse increased ; but percussion does not indicate lateral expansion. On auscultation, a chirping musical murmur is heard over the apex of the heart, at the end of the first sound. This murmur becomes much more faint towards the base. To the left of the manubrium of the sternum, a bellows murmur takes the place of the second sound. This murmur is quite concealed by loud friction râles, when respiration is going on, but is immediately perceived when the patient holds his breath. Tongue, slightly furred ; appetite good ; some thirst. Bowels regular ; urine natural. Sp. gr. 1020— not coagulable. The chest, face, and arms, are covered with an eruption of prurigo, which he has had several times. On the right thigh, towards the lower part, there are several cicatrices, and three sinuses, which communicate with dead bone. Is much troubled with sweating, which at night is very profuse. *To have good diet, with sweet milk morning and evening, and a dessert spoonful of Cod-Liver Oil three times a-day.* ℞ *Mist. Scillæ* ℥iv., *Tinc. Opii Ammon.* ℥ss., *Aquæ Cinnam.* ℥iss., *Aquæ font.* ℥ij. M. *Half-an-ounce three times a-day.* 30th.—Friction râle less. Gurgling râle, on right side. Upper part of *chest to be rubbed with Tartar Emetic Ointment.* July 2d.—Chirping murmur has become faint, and occasionally is inaudible. Has vomited his food several times. *Naphthæ* ℥iss., *to be added to mixture : to have beer for drink.* 5th.— Chirping murmur quite gone. 8th.—Chirping murmur returned. Cough severe—causing vomiting. Eruption, brought out by ointment, painful. *Omit the Ointment and Mixture.* ℞ *Pulv. Tragacanth. Co.* ℥i., *Naphthæ medic.* ℥i., *Sol. Mur. Morph.* ℥iij., *Syrup. Aurantii* ℥ss., *Mist. Scillæ* ℥v., M. *A table spoonful thrice a-day.* 21st.—A seton was introduced beneath the right clavicle. Still vomits in the morning, but takes food and medicine better. August 6th— The expiratory murmurs under right clavicle are now quite dry. Vomiting is diminished. *Omit the mixture.* ℞ *Ferri Citrat.* ℥ss., *Tinc. Aurantii et Syrupi,* āā ℥ss., *Infus. Columbæ* ℥vi. M. *A table spoonful three times a day.* 12th.—The seton discharges freely, causing great irritation, and is to be withdrawn. Sept. 7th.—Appearance of patient much improved. Sounds of cavity in chest continue dry. *Takes now again a table spoonful of the oil three times a day.* Oct. 28th.— Musical murmur has entirely disappeared. He is becoming quite fat, and is able to go about the ward all day. Complains only of slight cough at night, and palpitation on exertion. The right infra-clavicular region is becoming flat. *Omit the mixture and also the Cod-Liver Oil.* Nov. 18th—Cough has returned with slight mucous expectoration ; and, on auscultation, mucous and sibilant râles are heard all over the chest. Ordered to recommence the oil. ℞ *Mist. Scillæ* ℥vss. *Vini Ipecac.* ℥ij. *Sol. Mur. Morph.* ℥i., M. *A table spoonful three times a-day.* From this time he rapidly improved. The cavity became perfectly dry, and respiration over it was accompanied by blowing murmurs. Cough and expectoration greatly diminished. His general appearance is healthy, and he is very stout. On Jan. 13th, it is noted, that, on percussion, a distinct crackpot sound is heard in the right infra-clavicular region, and faintly also on the left side. On auscultation, the heart's sounds are loud all over the chest, the second sound being accompanied with a distinct bellows murmur. Musical murmur has never returned. There is bronchophony and prolonged expiration in the right infra-clavicular region, but no moist sounds. Sleeps well, and is very little troubled with cough. Does not sweat ; is very fat ; appetite good. This boy, as far as all general symptoms are concerned, may be regarded as having been in good health for the last two months.

This case offers a good instance of the advantages of cod-liver oil. On admission, he presented the wasting characters of phthisis in its last stage. The emaciation was extreme. The cough and sweating most distressing, and the physical signs demonstrated a cavity as large as the fist, in the right lung. Under the use of the oil his strength rallied After a time it was given up, on account of his becoming so fat. Gurgling râles, and other signs of exudation,

however, once more became apparent, and again disappeared when the use of the oil was resumed. He has continued to take it ever since, and the cavity is evidently contracting. With the exception of very slight cough, and expectoration in the morning only, he may be considered as enjoying good general health. The sequel of this case will be given on a future occasion.

ABDOMINAL ANEURISM TREATED BY THE METHOD OF VALSALVA.

CASE I.—John Christie, a tobacco-spinner, æt. 23, admitted into the clinical ward, June 21st, 1849. He states, that three years ago he had a fever, since his recovery from which he has had occasional vomiting, with pyrosis and cardialgia. It is now twelve months since he first perceived a throbbing in the epigastric region, followed shortly afterwards by pain in that situation. He continued his employment, however, until six months ago, when he was obliged to desist from it on account of the increased pain and pulsation, caused by any muscular exertion. About this period, also, he noticed, above the umbilicus, a deep-seated globular swelling, which has been gradually increasing up to the present time. He has often, on stooping, felt great pain, which shoots down the right leg. On admission, he presents a sallow appearance, and complains of weakness and pain in the epigastrium and right hypochondrium. In the former situation, immediately above the umbilicus, there is a globular swelling about two inches in diameter, which pulsates strongly, and is painful on pressure. On auscultation, a loud bellows murmur or whiff is heard over and around the tumour, synchronous with the arterial diastole. The pulse is 78, of good strength—all the other functions are healthy, with the exception of occasional retention of urine.

On the 28th of June, it was determined on, with his own consent, to try the plan of Valsalva. Since his admission into the house, all the circumstances in connection with the case have been carefully studied. The epigastric pain ceased after the application of twelve leeches. On passing a catheter into the bladder, a slight stricture was detected, about eight inches from the orifice. This at present causes no inconvenience. Venesection was ordered to be practised in the upright position, until incipient syncope came on. To have the following diet :—*For breakfast, an egg, milk* ℥iv*., bread* ℥iij. *For dinner, steak* ℥ij*., bread* ℥ij. *For supper, bread and butter* ℥ij*., and a cup of tea.* On July 5th, he was again bled to syncope, and the steak at dinner was reduced to ℥j. On the 7th of July, he complained of pain in the right lumbar region deep seated, and of pain during micturition. *To have pot. bitart* Ꝯj. *three times a-day—twelve leeches to be applied to the painful part, and the bread to be reduced to* ℥vj. *daily.* On July 9th he was again bled to ℥xij. On the 15th, twelve leeches were applied to the epigastrium. On the 26th, syncope came on after venesection to ℥vj.

His condition on the 30th of July was as follows :—Sounds of the heart natural. Pulse eighty, of good strength. Indeed, the pulse, notwithstanding the low diet and bleedings, was so good, that I suspected he must be taking food clandestinely. I found that he was in the habit of getting milk to drink from the night nurse, not knowing that it would interfere with the treatment, which he seems resolved to follow out. The pulsation in the abdominal tumour is greatly diminished. A catheter is occasionally passed into the bladder with relief, and the stricture is no longer perceptible. There is diminished secretion of urine. *Powders of bitartrate of potass to be increased to* 3j. *three times daily. Venesectio ad nauseam.* August 4th.—The diet has been rigorously kept since last report. He lost ℥x. of blood at the bleeding. The pulse is now slow and soft. The pulsation in the tumour very feeble. His weakness seems to be extreme. His friends visited him in the afternoon, however, and persuaded him to leave the Infirmary. To the astonishment of the nurse he walked out of the house, with little assistance, to the nearest cab stand, a distance of about 250 yards.

On the 24th of August, he was re-admitted under the charge of Dr Christison. He walked from the railway station to the infirmary, a distance of about a quarter of a mile. His frame is more robust, and he is stronger than formerly. The tumour pulsates once more forcibly, and is again painful. He was immediately placed on his former low diet, which was continued rigorously up to the 29th of December, when he again insisted on going out. The pulsation in the tumour was, as formerly, greatly reduced. The pulse became soft and weak. He expressed no desire for more food, and seemed to bear the treatment without a complaint.

CASE II.—Henry Smith, æt. 35, sailor, admitted December 19th, 1849. States, that about twelve months ago, while at sea, he received a severe blow on the back from the tiller of the vessel. He was knocked down, and lay insensible for a short time. Since then he has experienced pain in the abdomen and back, and latterly pulsation in the abdomen, and a sensation of tingling and numbness in the thighs, legs, and feet, especially on the left side. States, that about three weeks after the accident he was admitted into the Liverpool Infirmary, where he remained for about eleven months. He was treated by opiates and other anodynes, and latterly also by leeching and cupping over the pained part of the abdomen. From this treatment he did not receive much benefit. On admission, he is of a dark complexion; appearance strong and robust. A tumour is distinctly seen pulsating in the left hypochondriac region. It is of an oval form, and measures about three inches transversely; its long diameter cannot be ascertained, as its superior portion ascends below the ribs; but the inferior and lateral margins can be distinctly felt. He complains of great pain and tenderness in the region of the tumour, and of a beating, which is increased on exertion, and also upon assuming the erect posture. He feels easiest when lying doubled up, resting on his elbows and knees, and in this position he is generally seen during the day. The pulsation of the tumour is forcible, isochronous with, and immediately succeeding, the heart's impulse. On auscultation, a soft bellows murmur is distinctly heard over the tumour, and is loudest at the lower part. The apex of the heart beats about an inch below the nipple. Impulse tolerably strong. On percussion, the cardiac dulness extends transversely about two and a-half inches. On auscultation, the sounds are normal in character; the first is heard loudest over the apex, just below the nipple; and the second is most distinct at least three inches above and to the inside. He has no cough or expectoration. The right side of the chest is more resonant on percussion than the left, both in front and behind. On auscultation, the respiratory murmurs are normal. Appetite tolerably good. Bowels regular. Urine natural in quantity, sp. gr. 1·025, not coagulable; presents a deposit of lithate of ammonia. *Ordered a morphia draught at night.* 23d.—Has never slept properly since his admission. States that it requires a very large opiate to produce any effect upon him. *Ordered to be bled to syncope,* and his diet to be as follows:—*Breakfast.* Bread, four ounces; milk, eight ounces. *Dinner.* Steak, two ounces; bread, two ounces. *Supper.* Bread, two ounces; tea, eight ounces. 24th.—He was bled to thirty ounces without syncope or nausea being induced. The blood drawn exhibits a distinct buffy coat. Pulse 88, weak and soft. Pain easier, and sleeps better at night. 25th.—Dislikes beef for dinner, and would prefer a little rice-pudding to the bread at dinner. *To have one ounce of mutton and three ounces of rice-pudding for dinner. Twelve leeches to be applied over the tumour.* 26th.—Leeches bled freely, and he is now easier. Urine still presents a deposit of lithates. 30th.—Complains of constipation; pain in abdomen rather increased. *To have Elect. Sennæ ʒi. daily. Ten leeches to be applied to the region of the tumour.* 31st.—Leeches did not bleed so well. Pain still severe. *Applicet. Emplast. Cantharid.* 3 × 3 *parti dolenti.* January 2d.—Blister gave some relief. Pulse becoming stronger. *Ordered to be bled* ʒxij. 3d.—The blood exhibited the buffy coat, but in a less marked degree than formerly. No faintness or nausea was induced. *Two*

ounces of bread to be taken off his breakfast, and half an ounce off his supper. To be *allowed a bottle of lemonade daily.* 7th.—Sleeps very badly. ℞ *Sol. Mur. Morph. Tinct. Hyoscyam. āā,* ʒss., *Aquæ* ʒss. *M., to be taken every evening.* 9th.—Sleeps rather better. Pain in tumour somewhat increased. *Eight leeches to be applied.* 10th.—Leeches gave relief. 13th.—Still complains of constipation. *To have a colocynth and hyoscyamus pill daily.* 16th.—States that for the last three or four days he has felt much stronger, and the pain and pulsation in the tumour have increased proportionally. *Ten leeches to be applied.* 17th.— Leeches gave relief, but still he does not sleep well. 21st.—Pulse tolerably strong. *Ordered to be bled to syncope.* 22d.—He was bled yesterday to twenty-six ounces, without inducing faintness or nausea. To-day his pulse is weak and soft, and he expresses himself much easier. The blood exhibited a distinct buffy coat. Urine loaded with lithates.—*(To be continued.)*

The treatment of internal aneurisms by the method of Valsalva has for sometime been discouraged in this country, on the ground that it gives rise to a general irritability, and to symptoms of a distressing nature, which are often intolerable ; whilst, on the other hand, it is seldom attended by a permanently good effect. In neither of the cases above detailed, could any unpleasant symptoms be fairly ascribed to the practice ; but, on the contrary, it uniformly produced well-marked relief. Never having ventured on this treatment, however, previously, I conducted it, in the first case, with great caution ; still the frequent bleedings, and small amount of diet, produced very great exhaustion, and I was rather surprised to learn, on his first leaving the house, that the man retained sufficient strength to dress himself, and walk out with a tolerably firm step. In the second case, therefore, the bleedings were more frequently repeated, and greater in amount, while the diet was even more diminished ; and yet, after nearly a month's treatment, the pulse was of such good strength, that I ordered venesection to *syncope,* an effect that was not produced after the loss of twenty-six ounces of blood, so that the clerk, afraid to proceed further, bound up the arm. I am induced to suppose, therefore, that in neither of these cases has the treatment of Valsalva been carried out to its full extent hitherto ; but, in the second case, as in the first, there is a marked improvement in all the symptoms ; the man is invariably better after each local and general bleeding, and I propose to carry depletion much further than has yet been practised, and report the result at some future period. The tumour is evidently much smaller than when he came into the house, and the large amount of lithates in the urine, whilst his diet is so restricted, seems to indicate that the absorption of its fibrinous contents is going on.

CLINICAL SURGERY.—PROFESSOR SYME.

AMPUTATION AT THE ANKLE.

	Age.	Disease.	Date of Operation.	Date of Dismissal.
1. W. Williamson,	24	Caries after Chopart's op.	Nov. 24th, 1848.	Jan. 2d, 1849.
2. M. Black,	19	Disease of ankle-joint.	Feb. 2d, 1849.	Feb. 24th, "
3. J. Nichol,	20	Do.	April 17th, "	July 11th, "
4. J. Ronald,	32	Do.	June 5th, "	July 27th, "
5. W. MacCulloch,	15	Do.	June 22d, "	Aug. 18th, "
6. R. Black,	39	{Medullary tumour in sole of foot. }	Nov. 10th, "	Jan. 11th, 1850.
7. W. Mason,	17	Disease of ankle-joint.	Nov. 24th, "	under treatment

With reference to these cases, and two which have occurred in private, within the last twelve months, Mr Syme stated, that he had performed amputation at the

ankle between thirty and forty times, with results so satisfactory as completely to confirm the favourable anticipations of the operation originally entertained. In order to appreciate fully the advantages of this procedure, it must be recollected, that the circumstances requiring its performance are the same which have been held to warrant amputation of the leg. Now, in the first place, with respect to the comparative mortality of the two operations, it might be remarked, that instead of fatal effects occurring to the extent of 25 per cent., as it appeared from hospital statistics that they did, after performance of the one, there was hardly any instance of death being caused by the other. In one solitary case which had terminated fatally in the hospital, there could be no doubt that the patient, a girl, eleven years of age, died from pneumonia, induced by the inhalation of ether. Indeed, the evidence of this was so distinct, that Mr Syme formed and expressed the resolution to abstain for the future from the use of ether as an anæsthetic agent—a resolution which the substitution of chloroform soon afterwards enabled him to maintain without any difficulty. Secondly, there had not been any serious hemorrhage, exfoliation, or neuralgic pains, consequent upon amputation at the ankle. And, lastly, the stump formed in this way had proved, as a support of the body, immeasurably superior to any ever obtained by dividing the bones of the leg through their shafts, the thick integuments of the heel affording a cushion of the most effectual kind for resisting pressure. Patients who had suffered the operation were able to stand, walk, and even run, without any covering or protection of the stump ; and a gentleman present, having had his attention accidentally directed a few days before to some boys who were amusing themselves on a slide in the street, discovered that one of them had undergone amputation at the ankle.

Mr Syme stated, that he had never deviated from the mode of operation originally described by him, except in respect to the length of the plantar flap, which, in the first instance, he had formed of undue extent, and was soon taught the propriety of curtailing. To compensate for this original error, he had, on many occasions, endeavoured to explain, that the edge of the flap *should not extend beyond a line passing from the centre of one malleolus to that of the other, while the foot is at a right angle with the leg.* The covering thus preserved is amply sufficient, and may be detached from the os calcis without any difficulty or delay.

In the " Gazette des Hôpitaux," of the 6th December last, the wood-cut here copied appears in illustration of Mr Syme's operation, but its *incorrectness* will appear from the dotted lines which represent the proper course of incision.

It is plain that the excess of length represented in the Parisian sketch would greatly increase the difficulty of detaching the flap, and also the risk of its sloughing from imperfect nourishment, which will, of course, be always in proportion to the length of the flap.

In the "Bulletin Général de Thérapeutique," of the 30th November last, it is said that Mr Syme has adopted an alteration in the mode of operating proposed by MM. Jules Roux and Sédillot of Strasbourg, in illustration of which there is represented a foot with the incisions so directed as to form a rhomboidal lateral flap. Now, it is hardly necessary to say, that there is not the slightest foundation for this statement. Indeed, Mr Syme has repeatedly taken occasion to express his regret for the ingenuity expended, and questionable advantage afforded, by attempts to improve an operation which can hardly be altered without prejudice to its merits—of simplicity, facility, and efficiency. The truth is, that the integuments of the heel are so well suited to afford a covering for the bone, that it would be difficult, by any form of incision, to prevent them from constituting a good stump. But the transverse incision, restricted within proper limits—whether its execution or the result of its performance be taken as the ground of judgment—seems fully entitled to the preference which was originally given to it. With reference to this part of the subject, it is not unworthy of notice, that when Mr Liston adopted amputation at the ankle, he performed the amputation precisely as it had been done in Edin-

burgh, and with perfect success in both of the cases selected for it, one of which, it may be added, was the last operation he performed in private practice.
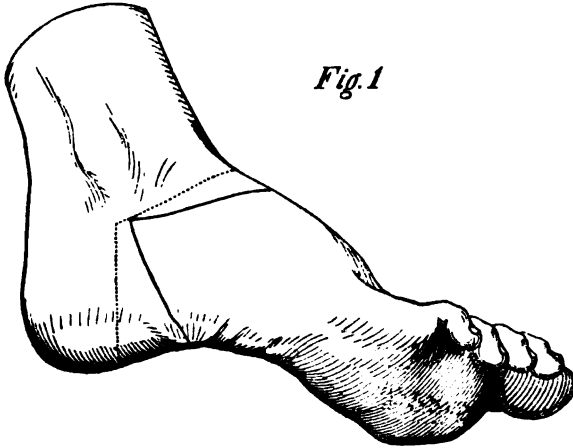
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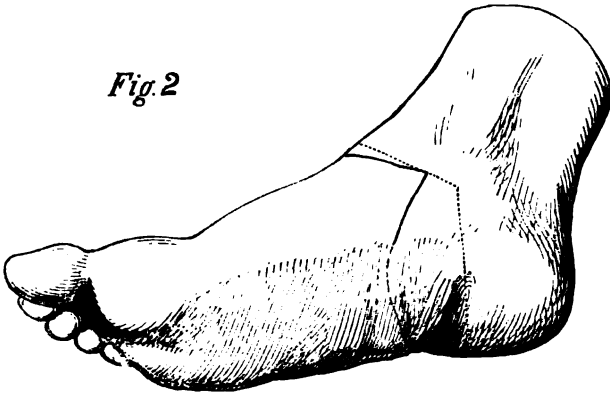
Fig. 2

Part Fourth.

PERISCOPE.

ANATOMY, PHYSIOLOGY, AND PHYSIOLOGICAL CHEMISTRY.

EXPERIMENTS ON THE CONTRACTILITY OF THE SPLEEN.

M. Ch. Bernard, at the suggestion of M. Rayer, and with the assistance of several members of the Société de Biologie, made the following experiments upon two dogs.

A poisonous dose of strychnine having been exhibited, the spleen of the first animal was exposed, care being taken not to interfere with its vascular pedicle. The different dimensions of the organ were carefully measured, both before and after the accession of the tetanic convulsions which preceded death; the second measurement indicated a very slight diminution in volume, which might be accounted for by the diminished quantity of blood circulating within the viscus; but it seemed evident to several of the spectators that the form of the surface of the spleen became corrugated, and that this change was especially conspicuous at its borders.

The spleen of the other dog was then exposed, and its dimensions noted. The conductors of a powerful electro-magnetic machine were next applied to its extremities; and, after several minutes of artificial stimulation, the length of the organ had diminished from two to three centimetres, i. e., from four-fifths to six-fifths of an inch. This experiment was several times repeated with a like result; and when the electro-magnetic current was passed across the smaller diameter of the spleen, similar reduction of bulk was observed. The vascular pedicle of the organ was next divided, and when the magnetic current was now applied repeatedly to the extremities of the long axis of the viscus, distinct contractile movements were provoked.

Kölliker has recently published an interesting memoir upon the presence of muscular fibro-cells in the spleen, and in other localities, as the true skin, the mamma and its nipple, the interior of the eye (muscle of Crampton, &c.), the digestive tube, the bladder, part of the prostate and of the vagina, the arteries, veins, lymphatics, ureters, urethra, Fallopian tubes, uterus, dartos and vasa deferentia, trachea, bronchi, &c. The experiments of M. Brown-Séquard upon the contractility of the skin have rendered it probable, that the appearance popularly denominated "goose flesh," "cutis anserina," "chair de poule," depends fully as much upon the contractile power of the areolar tissue as upon that of Kölliker's fibro-cells.—*Gazette Médicale*, December 22, 1849.

[There was some source of fallacy in the first experiment of Bernard, owing to the diseased condition of the spleen, consequently no legitimate inference can be drawn from it as to the effect of strychnia in reducing the bulk of the viscus, but the contractions observed in the second and third experiments seem to have been unequivocally muscular.]

ELEMENTARY ANALYSIS OF CHYLE AND BLOOD.

M. Millon has communicated to the Academie des Sciences some observations, of which the following passage is an abstract:—

"I have made simultaneous analyses of the arterial blood and chyle of two dogs, fed in very different ways. One was supplied for two days with milk only; the other was fed, during the same period, with a large supply of fat, mixed with bread and flesh. The blood of the first was found to contain carbon and nitrogen in the same proportion as albumen; but to differ from albumen in furnishing a large excess of oxygen. The chyle, which contained one-third of the proportion of organic solids found in the blood, otherwise corresponded exactly with it in composition, and, far from presenting an accumulation of fatty matter, might be regarded as highly oxygenated albumen.

"In the blood of the dog fed on fat, the carbon and nitrogen existed in the proportions found in albumen; but instead of an excess of carbon, the blood seemed to have fixed an excess of hydrogen. This blood was far more highly charged with hydrogen, than that of the first animal.

"The examination of the chyle of the second dog furnished similar results, —consequently a fresh proof of the similarity of the constituents of the chyle and arterial blood in the same animal.

"These analyses seem to indicate the following physiological inferences:—The analysis of the first blood renders it probable, that there existed in this liquid, besides the albuminous serum, fibrine, and constituents of the globules, a

considerable proportion of oxidated compounds, at whose expense the products of secretions (always so highly oxidated) might be formed.

" In the second blood, with the excess of hydrogen, these same oxidated products probably also existed; but they were masked by the accumulation of fatty matter introduced in consequence of the fatty regimen to which the animal had been subjected.

" On comparing the blood and chyle simultaneously obtained in each experiment, the liquids were found to be very analogous in composition ; but the chyle furnished no indication tending to prove that the absorptive power of the lacteals had been exercised upon the *fat* in preference to other nutritive principles.

" When fat has been administered in excessive quantity (' à des doses exceptionnels '), chyle and blood alike indicate the fixation of a fatty principle. Is this fixation more remarkable in the chyle than in the blood ?—or is there not rather a general dissemination of the fat assimilated, which lodges at first in the cavities best fitted for its reception ? Facts seem considerably in favour of the latter conclusion."—*Gazette des Hôpitaux,* 3d January 1850.

USES OF THE PANCREAS.

Haller and (more recently) Magendie have confessed, that the function of the pancreatic juice is quite unknown. Tiedemann and Gmelin conjectured that, by means of the azotised principle which it contains, it may contribute to the assimilation of vegetable articles of food. Valentin, Bouchardat, Sandras, Strahl, and others, showed, by experiment, that it possesses the property of converting starch into dextrin and grape-sugar.

Bernard promulgated an opinion, which has of late been almost universally accepted, that the chief, or only, use of the pancreatic fluid is to effect the digestion of fat. Eberle had remarked, some years before, that the fluid had the property of retaining fat in a state of emulsive suspension.—(*Phys. der Verdauung,* p. 235.) An abstract of Bernard's experiments and doctrine will be found in the " Retrospect" of the *Monthly Journal* for June 1849.)

Frerichs has more recently investigated the subject, and his conclusions differ materially from those of Bernard. He remarks, that the pancreas of graminivorous animals is highly developed, yet that their food contains little or no neutral fat. It is tolerably clear that the function of the viscus must in these animals be unconnected with the assimilation of fatty matters. Frerichs' experiments have proved that starch-paste, digested at 86° Fahr. with pancreatic juice, is within an hour and a half totally converted into dextrin and sugar; that the juice exerts no action upon coagulated albumen ; that it forms an emulsion when shaken with olive oil, but that the oil again separates almost completely, when the mixture remains undisturbed; that serum, bile, and saliva, form similar emulsions with oil.

Artificially digested albumen, mixed for six hours with pancreatic juice, and then heated to the boiling point, becomes very turbid. This turbidity is far less conspicuous when a parallel experiment is made with bile, instead of pancreatic juice.

When chymified albumen is digested for twenty-four hours with a mixture of bile and pancreatic juice, the bile is found to subside in the form of a resinous precipitate ; the fluid above remains clear, has a wine-yellow tinge, and, when heated, becomes flocculent. Similar effects were produced, but in a far feebler degree, by treating chymified albumen with bile alone.

When the pancreatic ducts of a cat are tied, and the animal afterwards fed upon milk, or fat meat, and killed from four to six hours after a meal, Frerichs states, that the lacteals are usually found full of white fluid. He varied this experiment in many ways : sometimes a ligature was passed round the intestine, below the point where the ducts from ·the liver and pancreas enter it, and the lower portion of the bowel was afterwards injected with milk or olive oil. In other experiments the small intestine was divided in the middle, and either portion filled with oil, and then carefully ligatured. It was

uniformly found that, although the lacteals proceeding from *all* parts of the intestine contained white fluid, they were best filled in the vicinity of those parts of the intestinal canal in which bile and pancreatic juice had access to the injected fluid.

Frerichs' experiments seem to warrant the following conclusions :—

1. That *one* function of the pancreatic juice is, to convert amylaceous matter into sugar during the process of assimilation.

2. That the pancreatic juice converts the bile into an insoluble compound, and thus favours its expulsion from the system, while it prevents its resorption.

3. That a third use of the pancreatic secretion is, in conjunction with the bile, to effect the fine division of the neutral fatty matters, essential to their absorption into the lacteal system.—(Wagner's *Handwörterbuch der Physiologie*, pp. 847-850.)

PHYSIOLOGICAL AND PATHOLOGICO-ANATOMICAL OBSERVATIONS ON THE CONJUNCTIVA. BY ARLT.

The conjunctiva, like the loose skin, consists of a layer of areolar texture supporting a papillary stratum covered by epithelium. It is well known that warty excrescences and hair occasionally become developed on this membrane; these, however, are to be distinguished from the morbid papillary structures which result from blennorrhœa.

The conjunctiva extends to a certain distance over the margin of the cornea, and terminates in a distinct depressed border, a little beyond which, and separated by a transparent ring, is the seat of arcus senilis, which Arlt concludes, from microscopic observation, to be an atrophied condition of the cornea. This peculiar mode of attachment of the conjunctiva to the cornea may be well observed after death in the shrivelled eyes of aged individuals, in which the former exhibits a circular fold. We have thus explained the mode of advance and retrogression of vascular texture over the cornea, and the circumferential position of phlyctenæ, pustules, and ulcerations in scrofulous, catarrhal, and rheumatic affections ; the annular inflammatory infiltration, and annulus arthriticus.

The central portion of the cornea is only covered by tesselated epithelium, which leaves transparent spots when it falls off in disease, and is regenerated, according to Arlt, by vascular formation from the circumference.

The tarsal edge of the conjunctiva is abundantly supplied with nerves, and is therefore sensible of mechanical irritation ; and when stripped of its epithelial covering, or otherwise affected, explains, through reflex influences, the production of certain kinds of photophobia.—*Schmidt's Jahrbuch*, 1849.

MATERIA MEDICA AND THERAPEUTICS.

INSUFFLATION BY THE MOUTH IN CASES OF THREATENED DEATH FROM CHLOROFORM INHALATIONS.—BY M. RICORD.

M. Ricord has had recourse to this practice in two cases, where fatal results threatened to follow the use of chloroform. In both cases the chloroform was administered by a honey-comb sponge, the large spaces of which, in appearance at least, allowed of a sufficient admixture of atmospheric air. In neither case was there any previous excitement.

The first patient was a woman, age 26, of excessively pusillanimous temperament, requiring excision of some small warts. The anæsthetic action of the chloroform was very rapid, the patient appearing asleep after a few inspirations. The sponge was removed, and the operation was hardly begun, when an assistant called M. Ricord's attention to the state of the pulse. He found the pulsation of the heart and respiratory movements suspended ; the lips livid and relaxed ; the limbs in a state of complete relaxation ; and the countenance alarmingly cadaverous. The usual means, such as currents of cool air, cold

water to the face, tickling of the nostrils, and artificial movements of the thoracic parietes, were all tried without effect. M. Ricord becoming alarmed, applied his mouth to that of the patient, and, after a few insufflations, the " dying woman " heaved a sigh, the chest expanded, the colour returned, and, in short, she was speedily restored.

The second case was in a young man undergoing the operation of circumcision. This patient also was rapidly affected, and without any appearance of excitement. The operation was finished, but the patient did not come to himself again, and remained in a state of alarming immobility, the pulse sinking, the heart ceasing to beat, the respiration being suspended, the sphincters relaxed, and the countenance death-like. After the failure of the other means, a similar process of insufflation was practised, and with a like success.—*Bulletin de Générale de Thérapeutique*, November 15, 1849.

[No doubt both of these patients had an over-dose of chloroform ; but it may be a question whether M. Ricord's insufflation was *the* thing which saved their lives. Such alarming cases have occurred very rarely in Edinburgh, where chloroform is probably more freely employed than in any other place, and we believe this to be in a great measure owing to the almost invariable use here of the simple handkerchief, which is the safest and most manageable of all the means of administering it. We know, however, of two cases, to which, without any exaggeration, M. Ricord's formidable description of his first patient might be applied. In one of these, in our own practice, the accident was due to the handkerchief being left by the assistant on the mouth of the patient, whilst we were engaged in an operation on the arm. The total cessation of respiratory movements directed our attention to the condition of the patient, whom we found pulseless. He speedily came round on sprinkling water on the face ; he afterwards took more chloroform with good effect. The relaxation of the sphincter is not in itself a grave symptom. It occurs in cases where the action of the chloroform is not in the least degree excessive.]

MONOHYDRATED NITRIC ACID AS A CAUSTIC.

This new caustic, prepared by M. Rivallier, consists of a piece of wadding or lint dipped in the acid, which forms with it a jelly-like collodion. It was stated to have the following advantages over caustic potass, and potassa cum calce. Its action is more easily limited, especially on inclined surfaces ; it produces deeper sloughs, and in shorter time ; these sloughs are so soft and gelatinous, that they oppose little obstacle to the action of the caustic on the subjacent tissues ; they can be removed at once by a spatula, and thus the action of the caustic carried on to the exact depth desired.—*Journal de Chemie Méd.* in *Bullet. de Thérapeutique*, November 1849. The above are the promises ; the following is the fulfilment thereof :—

A trial of the new caustic, which we (*Gazette des Hôpitaux*), were observing when we announced the virtues attributed to the new caustic, only partially realised the hopes which had been held out to us. Another trial made by M. Malgaigne seems to have succeeded still worse. The following is the account which he gives of it in the last number of the *Revue Médico-Chirurgicale*.

" M. Nelaton proposed to M. Malgaigne to try the new caustic on a woman affected with an ulcerated cancerous tumour of the breast, but which did not adhere to the subjacent tissues. The operation was performed by M. Nelaton, with the assistance of his colleague, and with all possible precautions. But the effect was far from answering the expectations. The caustic remained very liquid, and in spite of protection by compresses and charpie, spread over several points on the sound skin. The eschar was yellow and tenacious, it could not be removed with a spatula ; and, when it separated several days after, it was not so thick as would have resulted from Vienna powder (*Pot. c. calce*). Although put under chloroform, the woman, on recovering from it, complained of severe pain, which lasted all the day and part of the night. In

all respects, therefore, the two surgeons of the St Louis Hospital rejected M. Rivallier's caustic, as very inferior to those which we possess already."—*Gazette des Hôpitaux*, December 1, 1849.

THERAPEUTICAL PROPERTIES OF BELLADONNA.—BY M. DEBREYNE.

M. Debreyne has employed belladonna in various diseases since 1815. The following are some of the results of his experience as regards this drug:—

Hooping-Cough.—In 1817 and 1818 the disease prevailed at Montagne (Orne) in a severe form, resisting most of the ordinary methods of treatment. M. Debreyne's successful treatment by belladonna of some severe cases, in a family of six young children, led to his method being adopted in several hundred cases in the course of the epidemic, and which were in general relieved in the course of eight or ten days. He employs in hooping-cough only the powder of the root, that of the leaves being, according to him, not efficacious. He gives, in the course of twelve days as many grains as there are months in the child's age, and orders it to be taken in divided doses three times daily. Thus, for a child six months old, he orders six grains for a course of twelve days, in doses of a sixth of a grain three times daily, and so on, up to six years of age. In children above this age he never exceeds three grammes (forty-six English grains) in twelve days, and always in decided cases thrice daily. He does not begin this treatment till the tenth, twelfth, or fifteenth day of the disease, and only when the fits have assumed the true character of pertussis. If the fits terminate in vomiting, the doses should be administered, if possible, immediately after a fit.

[There is nothing new in the use of belladonna in hooping-cough. It has been recommended by various authors, and especially by Hufeland. The peculiarity of M. Debreyne's practice appears to be in the use of the root, and in the extent to which he gives it. He maintains that reported failures are owing to its being given in too small doses.]

Epilepsy.—The author gives the history of a number of cases of that disease, treated by belladonna. He uses here the watery extract, beginning with doses of two-thirds of a grain morning and evening, and rapidly increasing it to a grain and a-half morning and evening. Sometimes the dose has been increased much beyond this. In one case, treated by a former pupil of M. Debreyne's, as much as thirteen grains were given in twenty-four hours. He acknowledges that there are certain cases of epilepsy which resist that remedy, a result not to be wondered at when we consider the very great variety of causes which give rise to this disease. He seems to have used it indifferently in every variety of epilepsy, some of his patients being young, some old, some chlorotic, others apoplectic. He insists especially on the necessity for conjoining anthelmintics with this special treatment, as he considers that worms may be suspected, in a great majority of instances, whether the patient has shown decided symptoms of them or not.

[Intestinal irritation is perhaps the most frequent cause of epilepsy in cases not connected with organic disease, as vitiated secretions and fæcal matters are the source of the irritation much more commonly than worms. If, by anthelmintics, M. Debreyne means active purgatives, he merely states what is familiar to every practitioner.

We do not find any reason stated for his using the extract in these cases instead of the powdered root of which he speaks so confidently in hooping-cough, or why the latter disease should not be combated by the preparation which answers in the epileptic cases.]—*Jour. des Connaissances Medico-Chirurgicales*, December 1849.

MEDICINE.

ON BLOOD-LETTING IN THE PNEUMONIA OF CHILDREN.

Dr Mauthner, physician to the Vienna Hospital for the diseases of children, gives the results of an experience extending over eleven years, in the manage-

ment of a very frequent and insidious form of pneumonia to which children are subject.

His memoir is divided into two parts; in the first of which he describes the form of pulmonary inflammation, which he has most successfully treated by venesection; and in the second, the simplest and safest mode of performing the operation.

He alludes to the extreme frequency of pneumonia among the children in the Austrian capital, as the probable cause of the extraordinary prevalence of pulmonary tuberculosis there. It is well known, that tubercles develop themselves most readily in those parts of the lungs which, in consequence of hepatisation, have become obstructed and inactive; and as pneumonia is the most frequent disease of infancy in Vienna, there seems reason for believing that it may lay the foundation for the phthisis which is so fatal to adolescents. No one form of treatment can be applied to all cases of pneumonia occurring in childhood, for complications are far more frequent in the disease as it attacks infants, than in the cases of adults. Dr Mauthner gives a most important caution regarding the evidence afforded by statistics, as to the efficacy of different plans of treatment in subduing pneumonia. In some of the continental hospitals we have seen patients bled for acute inflammation, till nature would scarcely endure further depletion; in others, they are left to the resources of nature, and are daily committed to the tender mercies of a crowd of students, armed with stethoscope and pleximeter; in some favoured localities they are indulged with the infinitesimal doses of the homœopaths; and for aught we know, some ' esprit fort " at Vienna may ere this be carrying on the hydropathic treatment of pneumonia. Dr Mauthner must, we think, have been quite aware of all this, when he wrote the following very sensible paragraph :—" The numerical uniformity of mortality, as illustrated by the records of great hospitals in which pneumonia is treated in the most opposite ways, is exceedingly likely to deceive and mislead the young physician. 1 have lived long in hospitals, can speak from an eighteen years' experience, and know, that when in a great hospital, notwithstanding considerable occasional variations, the *average* mortality shows a fair proportion between the cures and deaths, one is usually apt to approve of the practice adopted in that hospital. Not so the *practical* physician. He regards each individual patient as an entire study; he cannot content himself with the reflection, that a certain number of his cases of pneumonia are cured; he must seek to heal every case which occurs in his practice by every means at his disposal. The greatness of the practical man consists in *individualising*, not in generalising."

Dr M. next proceeds to show, that the mere immediate mortality from pneumonia (no matter how the cases are treated) is not necessarily great; that, especially in cases occurring in children, great permanent mischief may be done to the lung, without the excitement of very serious constitutional symptoms. Yet great organic changes in structure must not be viewed with indifference. They may lay the foundation for the most dangerous and intractable diseases; and there can be no question, that a child whose lungs are not free from the products of previous inflammation, runs extreme risk, if it happens to contract hooping-cough, small-pox, measles, or scarlatina.

Hence the importance of studying not only the proportionate mortality of the sick, but the condition in which patients continue after convalescence. In great hospitals, patients who find themselves better, demand their dismissal, and are lost sight of; but in a small institution, such as the hospital for infants at Vienna, the patients whom the physician dismisses, are, for the most part, brought back again on the occurrence of any untoward symptom.

It is only in the genuine *lobar* pneumonia of children that Mauthner recommends venesection. This form of disease usually occurs without any lengthened premonitory stage, after alternate exposure to extreme heat or cold, sometimes apparently in connection with depraved digestion, often as one of the *sequelæ* of scarlatina, measles, or small-pox.

Its prominent symptoms are,—difficult breathing, with oppression at the chest, short sharp cough (a symptom which, in the severe forms of the disease, is at first wanting), heat of surface, fever, head affections, and sometimes vomiting.

Over the seat of the disease, which is usually the back of the right lung, the percussion sound becomes dull; and on auscultation in the early state, fine dry crepitation is audible; afterwards bronchial respiration. The child usually lies on the right side; and if it can speak, complains of pain in the chest; the pulse is small, hard, and frequent; the secretions and excretions are diminished in quantity. These severe attacks are most common in children above a year old, but infants are not exempt from them.

The anatomical characters of the *first* stage consist in extensive congestion (stasis) of the pulmonary parenchyma; of the *second*, in alteration of structure with effusion of plastic exudation in the form of red hepatisation; of the *third* (the so-called suppurative stage), in effusion of pus, sometimes diffused throughout the parenchyma, more rarely in children constituting true abscesses.

In the cases treated during the first stage, Mauthner has obtained the very best effects from blood-letting. He has often bled the little patients who have been brought for his advice to the hospital, permitted them to be carried home, and been subsequently astonished to find how completely this single remedy had obviated the urgent symptoms. On the other hand, he has too often seen the bad effects of neglecting this heroic remedy at the outset of the inflammation. In using the lancet, regard must be had to the age and constitution of the patient, and to the intensity of the disease. The depletion should not stop till the child turns pale, becomes sick, vomits, or seems exhausted. When the operation is properly performed, Mauthner thinks all other remedies, such as leeches, cataplasms, and internal physic, may be dispensed with, and in a few days the child is well.

In cases in which the disease has reached its *second* stage, the immediate effect of venesection is not so remarkable; but some benefit is usually speedily experienced, and within three days the bronchial respiration ceases, and the morbid process is removed, usually upon the appearance of some critical evacuation from the skin or kidneys.

Even when there was reason to suspect suppuration, Mauthner has often let blood after mature deliberation, and has had no occasion to repent the adoption of the practice. Thus he believes, that he succeeded in saving a boy of six years of age, who, after a neglected pneumonia of three weeks' standing, fell under his care, suffering from hectic fever, emaciation, and purulent expectoration. After in vain attempting a cure with digitalis and acetat. plumbi, Mauthner ordered venesection, and the boy recovered. Where, however, as is often the case, an unresolved pneumonia seems to have gone on to tuberculosis, bleeding can do no good.

The indications for venesection are derived, *first*, from an accurate physical exploration of the chest. It must, however, be noted, that when the cough and general symptoms indicate the existence of pneumonia, the absence of physical signs does not justify the neglect of proper remedies. For even when extensive congestion of the pulmonary tissue is present, if a certain quantity of air be still included in its interstices, the percussion sound and respiratory murmur may not be sensibly affected. Besides, the inflammation may be situated in a part of the lung which cannot be satisfactorily explored; or the child may be so restless and timid, as to render the use of the stethoscope impossible.

The *second* indication is derived from the age and individual constitution of the child. Strong plump children above a year old may be bled without scruple; those who are delicate will still bear depletion, if it be ascertained that their previous health has been good; even infants under one year of age, labouring under severe pneumonia, suffer less from venesection than from the application of three or four leeches.

The stage of the disease affords the *third* indication. In the congestive period

the remedy is quick and sure. When hepatisation has already taken place, the detraction of blood is never hurtful; but when the suppurative period has arrived, the lancet must be used cautiously and seldom.

The operation of opening a vein in the arm of a fat restless child is not easy, and for its proper performance requires some previous experience, for the *feel* of the vein must, more than the eye, guide the lancet. The ribbon must at first be drawn rather tightly, until the vein be felt and opened, when it must immediately be slackened again. While the blood trickles out (a full jet is seldom obtained from a child), the arm should be left quite still, for, on the slightest movement, the fat mobile integuments lap over and close the orifice. There is no difficulty in stopping the bleeding, either with a cross of sticking plaster, or by a single turn of a bandage.

The amount of blood drawn must be chiefly regulated by the age of the child. Considerable effect may be expected in infants from the detraction of a single ounce. Children from two to three years of age require a blood-letting of from two to three ounces, and older children more in proportion.

The usual relative proportion of serum and cruor in cases of pneumonia in children, Mauthner states to be *one* part of the former to *two* of the latter. He has not unfrequently observed the buffy coat, but attaches very little importance, in a therapeutic point of view, to its presence or absence. In the case of a boy, two years old, whom he had occasion to bleed to three ounces for severe pneumonia, which had been in vain treated by leeching, he found a buffy coat of two lines in thickness upon the blood, after it had stood for some time in a conical-shaped vessel. In this case there was no occasion to repeat the operation, but rapid convalescence followed.—(*Condensed from the Oesterreichische medicinische Wochenschrift, No.* 13, 1848.)

[In giving the substance of Dr Mauthner's remarks, we by no means wish to recommend the general adoption of the practice which he advocates. Parents usually entertain great objections to having young children bled, and it is probably in deference to their scruples that the troublesome and no less dangerous practice of leeching generally supersedes venesection in the treatment of infantile pneumonia. In a large proportion of the cases in which we have seen infants bled at the arm, the operation was unsuccessful, and the effect of the small quantity of blood obtained doubtful. Still, as the practitioner is often suddenly called to treat cases of acute inflammation in children, *e. g.*, acute hydrocephalus, pneumonia, laryngitis, &c., in which the early detraction of blood is likely to be useful, we think he will often succeed by adopting Dr Mauthner's practice, and if he fail, his other alternative (leeching, &c.) may still be had recourse to without loss of time.]

INTRACTABLE SCIATICA CURED BY CAUTERIZING THE DORSUM OF THE FOOT.

M. Pagan, surgeon to the Hôtel-Dieu d'Aix, has in four cases employed, with success, this practice, recommended by M. Robert. His first patient was a plasterer, thirty-four years of age, who had suffered from sciatica for fifteen years. After in vain trying the effect of leeching, of turpentine enemata, of repeated blistering, of moxas, and the endermic application of morphia, M. Pagan applied the actual cautery between the two last metatarsal bones, making an eschar of three centimetres in length by one in breadth. The night after the operation was the first which the patient had for a long time passed free from pain. The wound cicatrized after twenty days, and the sciatica was radically cured. The same remedy was used, with like success, in three other cases, which had resisted the milder forms of treatment. In all, the sciatic neuralgia extended low in the leg, even to the foot, and in all the cure was radical. Had the pain been limited to the thigh, M. Pagan thinks, that the cautery would have had most effect, if applied over the track of the nerve at the seat of pain. He instances the case of a soldier whom he cured of sciatica by superficially cauterizing the thigh with the olive-shaped iron. The chief obstacle to the employment of this remedy is the fear of the patient, naturally

excited by the idea of having his skin burned. If, however, the inconveniences of the cautery be contrasted with those of the more usual remedies, M. Pagan thinks, that the *tuto, cito, et jucunde*, will be found in favour of M. Robert's practice, the only one worthy of confidence when the neuralgia is of old standing and inveterate.—*Gazette des Hôpitaux, December* 25, 1849.

[Although these cases of M. Pagan seem worthy of attention, we should be loth to recommend the indiscriminate adoption of his practice. The causes of sciatic neuralgia are very various, and may be often removed by attention to the state of the patient's general health, especially by regular evacuation of the bowels. The hot-bath, quinine, arsenical solution, iodine, &c., sometimes cure cases connected with ague, syphilis, periostitis, &c. But there are others, depending upon organic disease of the spinal cord, or of the nerve itself, which are less tractable, and which, we fear, will often resist the most energetic practice. In obstinate cases, the cautery may be applied with some prospect of success, and the surgeon need not be deterred from recommending it from any fear of suffering on the part of his patient. The pain of intense neuralgia far exceeds that of the cautery, and the momentary suffering caused by its application, may be altogether annulled by the use of chloroform. It may admit of question, whether it should be the foot or the thigh on which the eschar should be formed. French practitioners are in general advocates for the derivative practice, and apply their blisters and other counter-irritants at a distance from the seat of disease. In *pure* neuralgia there may be some benefit obtained from applying counter-irritation over the *distal* extremities of the nerve affected.]

NEW MODE OF PERCUSSION.

M. Poisson, an "interne" of the Salpétrière, recommends percussion to be made in the ordinary mode, but without the interposition of a pleximeter, and with the finger (index or medius), armed with a polished thimble! A quantity of air being included between the tip of the finger and the extremity of the thimble, a highly resonant tone is elicited by a gentle tap ; and M. Poisson asserts, that variations in sound, quite inappreciable by other methods, are by his rendered distinct—*Gazette des Hôpitaux, January* 8, 1850.

[We have tried the above plan, and confess ourselves disappointed. If no pleximeter is employed, the percussion tone is only clear when the thimble impinges against a bone, as the clavicle or sternum, and when the abdomen is percussed, the sound is almost null. When a finger is interposed, the sound is clear, and sufficiently satisfactory results may be thus obtained ; but the repeated impact of the metal against the finger is scarcely tolerable, and even when a gutta percha thimble is substituted, is still far from agreeable. With a pleximeter there is such a clatter, that the true sound is quite masked. There are other sources of fallacy, as, for instance, the tympanitic sound of the included air, the escape of air alongside of the finger, and the diminished sensation of resistance. The pleximeter, struck with practised fingers, or with the caoutchouc hammer, is still the most valuable instrument for medical percussion.]

SURGERY.

It would not be more unbecoming in a medical journal to canvass the doings of private life, than to criticise the practice of hospitals, so long as it is not communicated to the profession. But when cases are published as creditable to the practitioner, and as examples for the imitation of others, it is the duty of every man who engages in the diffusion of medical literature, to examine carefully the principles which are involved in these proceedings, and unshrinkingly to express his opinion, if they should seem to him not only unsound, but calculated to mislead. These reflections are suggested to us at present by some cases which have lately appeared in the London medical journals, and of which the following are specimens :—

CASE I.—ATTEMPT TO CLOSE A FISTULOUS OPENING.

" The next patient brought before the numerous pupils of the hospital was a boy, thirteen or fourteen years of age, whose aspect and history presented the most lively interest. It appears that this boy had been seen by Mr Fergusson as long as a year ago, or more, with old disease of the hip-joint, all the bones entering into the articulation having been implicated. Numerous abscesses and sinuses had formed, and it would seem that a part of the sacrum was attacked, involving in the destructive process a portion of the rectum, about three or four inches from the natural orifice, and forming between the. ilium and sacrum an artificial anus. It required more than a cursory glance to make out the abnormal relation of the parts, for the displacement of the thigh-bone, the numerous cicatrices, the gaping and excavated division of soft parts, which allowed the escape of fæcal matter, and the anus entirely hid from the view, were rather confusing at first. Some time ago, Mr Fergusson had tried to remedy this loathsome complication by closing up a part of this aperture, by means of the needles and twisted suture ; but the distending force from within constantly succeeded in breaking down the adhesions ; and a slight patency was wisely allowed to remain, to give the other parts time to unite. The fistulous orifice, from about three inches, was at present reduced to about two, and it was now the surgeon's intention to reduce it still further. Mr Fergusson remarked, that this case had no precedent, and that no certain rule could be followed in the treatment of such complications. It occurred to us, that in this respect we are better off than the lawyers ; for when we have no *precedents*, we may safely take refuge in fundamental principles, which, aided by skill (of which there was certainly no lack here), will generally guide us pretty surely. The patient was put under the influence of chloroform by Dr Snow, who, by well-managed intermissions, kept him insensible for a quarter of an hour or more. We are always glad to see chloroform handled by experienced hands, for accidents have lately been thick upon us, as we can show. Mr Fergusson pared the cavity and margins very carefully, making cross incisions to release the parts ; the needles and the twisted sutures were successively applied, no opening, or at least a very small one, being left."—*Lancet*, Nov. 3, 1849.

CASE II.—TUMOUR OF THE FACE.

" A case, which excited a great deal of interest, was operated upon last Saturday, 15th instant, by Mr Fergusson ; both the size of the tumour and its situation, were well calculated to attract a large share of attention. The case runs as follows :—James B——, aged forty-six, a native and resident of Reading, unmarried, is an ostler, and has generally enjoyed good health, admitted, December 8, into the London ward, under the care of Mr Fergusson. He states, that thirty years ago, he first perceived a swelling in the neck behind the angle of the jaw, which continued increasing in size at a slow rate, and without pain, till about two or three months ago, since which time it has been increasing rapidly, giving the patient great pain at intervals. He says that he can remember no cause for its appearance, and that he has never submitted it to medical treatment. The tumour is of an irregular lobulated shape, and projects three or four inches from the side of the head and face. It extends from the mastoid process to the malar bone, and from a little above the zygoma to the level of the body of the lower jaw. It appears inflamed and softened at its most projecting point. On December 11, Mr Fergusson punctured the tumour in the last-named situation, and squeezed out some of the softened contents ; he is of opinion that the tumour is non-malignant, and that it has no connection with the lower jaw. When the patient appeared in the theatre, the tumour looked very much like the head of a foetus projecting from the side of the face, but the features were not distorted, and the general appearance of the man was satisfactory. Chloroform was administered by Dr Snow, the patient being in a recumbent posture, and Mr

Fergusson proceeded to the removal of this enormous growth in the following manner :—Two incisions, meeting at right angles, were made across the tumour, producing four flaps, which were carefully dissected back, to lay bare the bulk of the swelling ; a good deal of dark blood escaped whilst these parts were being divided. When the operator reached the lower part of the tumour, he was noticed to proceed very cautiously in dividing its cellular connections with the vessels and nerves which abound between the jaw and the sterno-mastoid muscle, and when the diseased mass was removed, a considerable cavity appeared, in which the external carotid artery could be seen beating. The masseter muscle was quite bare, but no distinct trace of the parotid could be distinguished. Indeed, the knife must have passed very close to the carotid, and it is certainly no easy task to keep clear of it. The numerous arterial branches, as the auricular, external maxillary, &c. &c., did not bleed profusely, and the hemorrhage was soon commanded by a few ligatures. Points of suture were placed towards the base of the angular flaps, a few shreds of diseased growth removed, and the wound dressed with compresses. The patient was kept continuously under the influence of chloroform, and experienced no pain. Mr Fergusson, in addressing the pupils, remarked, that this case presented unusual interest, both from the size of the tumour, and the locality where it had grown. Here was a tumour which had existed thirty years, involving the right parotid gland ; it caused great disfigurement, but the patient had hitherto been unwilling to allow of any surgical interference. Three months ago, however, the tumour increased rapidly, and for the first time began to give pain, and now the sufferer was anxious to have this diseased mass removed. Still it was a nice question, at present, whether the knife should be used, for it was evident that a new action had now set up in tumour. It was plain that the growth was originally non-malignant ; but it was not certain whether it had not latterly become so; as there are plenty of facts in the history of tumours, showing that such changes take place. If malignant, interference was not justifiable; but the tumour was distinctly superficial ; it had no connection with the jaw, or other important parts, and on a puncture being made in the inflamed part, cerebriform matter escaped. Such considerations led Mr Fergusson to consent to an operation, which, however, would have been much less hazardous, had the patient applied only twelve months ago, for now the tumour is three times the size which it then was. The dissection, continued Mr Fergusson, was carried very near the carotid artery ; and it is very probable that the portio dura nerve has been cut, for the patient, on leaving the theatre, already exhibited some signs of paralysis of the face. The patient must of course now run the risk of the casualties which may attend such extensive and deep division of parts. Still it is very probable that the disease will not return ; and the operator had seen smaller tumours of the kind, in the same locality, which, after excision, did not return. On a section of the tumour, it was found that the anterior part was formed of a hard, fibrous substance, which had formed around a cyst, the remains of which are still visible. Three-fourths of the growth presented the aspect of highly-injected cerebriform matter ; and it is Mr Fergusson's opinion, that this latter portion was fibrous originally, but has broken down by inflammation. The microscope will decide the true nature of the tumour ; but even that instrument does not always give a satisfactory solution ; and Mr Fergusson is inclined to put some faith in the old-fashioned way of deciding these questions. It is evident, however, that the growth was at first of a fibro-cystic character, whatever the subsequent changes may have been. The hemorrhage was far less than expected, and matters are in as favourable a state as the case will allow."—*Lancet,* Dec. 1849.

In the first of these cases, when the operator said that the fistulous communication was *unprecedented,* he must have referred either to the case or the remedy, and if to the former, he must have had in view merely his own field of practice, since the condition in question has been repeatedly met with by

other practitioners. For our own part, we have known the exit of a large " *lumbricus*" through the opening, give the first intimation of its communicating with the bowel, while, upon other occasions, the appearance of undigested particles of food, such as grains of rice, has afforded evidence of the same fact. But, if the operator meant to say that the *treatment* was unprecedented, we cordially agree with him, and would also express our hope that it may long remain unimitated.

When purulent matter makes a passage for its escape by inducing absorption of the surrounding parts, the route selected is not determined by chance, but regulated by the proximity of a cutaneous or mucous surface, and the nature of the textures around. The discharge having taken the course thus determined, can be prevented from flowing through it only by preventing its formation, or providing some more ready channel for its issue. Unless the source of discharge be dried up, or such a drain be established, it is plain that closing the orifice, however imperfectly, must tend to widen the cavity ; and every surgeon knows that the most effectual means of treating sinuses is not to cork them up, as the old practitioners did, with their sponge-tents, but to lay them freely open. But, as in the case under consideration, the matter proceeded from diseased bone, which did not admit of remedy, it is plain that repeated attempts to close the outlet, by sewing up its orifice, could not, by possibility, benefit the patient.

In the second case, also—the subject of which it appears has since died— there was a distinct departure from established surgical principles; since there is no rule of practice more absolute than that malignant tumours, which possess a diffused adhesion to the neighbouring parts, should not be subjected to excision. That this tumour was the seat of malignant degeneration, there can be no doubt, from the facts, that it "inflamed and softened at its most projecting point ;" that "on a puncture being made in the inflamed part, cerebriform matter escaped;" and that, upon examination after removal, " three-fourths of the growth presented the aspect of highly injected cerebriform matter ;" while the " shreds of diseased growth" that remained to be taken away after the principal mass was scooped out, sufficiently testify as to the want of circumscription.

Young practitioners naturally look to the periodical medical press for illustration of the principles which they have been taught in lectures or have learned from books. But if, instead of this, they find cases treated at variance with established surgical rules, and yet received by the profession in silence, if not with commendation, they must be shaken in their confidence as to there being any sound principles of practice.

METHOD OF PREVENTING THE INGRESS OF AIR IN EVACUATING LARGE COLLECTIONS OF FLUID. BY M. RACIBORSKI.

In evacuating large chronic abscesses, tapping the chest for pleural effusions, and similar cases, the entrance of air after the operation, is effectually prevented by making an oblique subcutaneous puncture. Air may enter, however, during the operation, and many plans have been had recourse to for preventing this accident. M. Raciborski has adopted the following proceeding with success :—A bladder proportionate in size to the amount of fluid to be evacuated is softened by soaking it in water, it is then squeezed to force all the air out of it, and the orifice of the bladder is afterwards fixed on the canula of the trocar, the handle of the instrument being within the bladder. After the introduction of the trocar into the collection of fluid, the handle can be seized through the bladder, withdrawn, and left loose in the bladder. The bladder at once begins to expand from the entrance of the fluid, which is evacuated without the patient being annoyed by the sound which accompanies the discharge of the fluid in free air.

Should the distension of the bladder show that there is more fluid than it will contain, all that is necessary is to puncture the bladder at its upper end,

taking care at that moment to press the bladder against the opening of the canula to prevent the ingress of air.   The bladder once emptied, is to be secured by tying a ligature over the puncture made into it, and allowed to fill again.—*Bulletin de Thérapeutique*, December 1849.

OPERATION OF GASTROTOMY.—DEATH IN TWENTY-FOUR HOURS.

Encouraged by experiments made upon the lower animals, M. Sédillot, of Strasbourg, has proposed to make an artificial opening through the abdominal parietes into the human stomach, for the purpose of introducing articles of food, in cases of irremediable obstruction of the œsophagus.   He has lately performed this operation upon the living subject.   The patient, a man of fifty-two years of age, had for a year suffered from the ordinary symptoms of stricture of the œsophagus, and for the five weeks immediately preceding the operation, even small quantities of fluid had been with the utmost difficulty taken into the stomach.   Catheterism of the œsophagus was thrice attempted, but always failed.   The state of emaciation to which the patient was reduced may be judged of by the fact that, since the commencement of his sufferings, his weight had fallen from 220 to 112 pounds.

An operation having been determined on, the patient was put under the influence of chloroform, and a crucial incision, about an inch and a-half in diameter was then made, about two and a-half inches below, and outside, the extremity of the ensiform cartilage.   The four flaps of integument were held back by hooks, and the operator then successively divided the aponeurosis covering the left (?) rectus muscle, the rectus muscle itself, the aponeurosis beneath the muscle, and finally the peritonæum.   A single vessel required ligature.   The great omentum was next seen, at a considerable depth from the abdominal parietes.   It was siezed with a blunt hook, and gentle traction being made upon it, a portion of the great curvature of the stomach was brought into view.   Selecting a point on the anterior surface of the stomach corresponding to the line of union between its cardiac and pyloric portions, M. Sédillot punctured the viscus and introduced a canula.   The operation was performed at 10 o'clock in the morning, and occupied nearly an hour.   During the day the state of the patient was satisfactory, and in the evening, when the abdomen was examined, it was free from pain.   A little "eau sucrée" and chicken soup were several times injected into the stomach through the canula.   The patient, in the early part of the evening, was cheerful and free from pain, fell asleep about midnight, but wakened with a start about four A.M., demanding air, and complaining of a burning sensation in the vicinity of the wound.   At *six* A.M., paroxysms of dyspnœa threatening suffocation ; respiration noisy and accelerated ; coldness of extremities.   At *half past seven* the patient died, sinking finally without suffering.

On dissection, there was found some redness of the outer surface of the stomach, and slight ecchymosis around the canula ; but no opacity, exudation, adhesion, or other sign of abdominal inflammation.   The œsophagus was compressed by a firm cancerous tumour opposite the origin of the sixth rib, and barely admitted a probe one-eighth of an inch in diameter.

What, then, was the cause of death ?   Some of the medical men present at the dissection were disposed to attribute it to the extreme weakness of the patient ; others to the influence of chloroform kept up for an hour on a patient thoroughly exhausted ; some to the circumstance of the left pneumo-gastric nerve being engaged in the cancerous mass ; while a fourth opinion compared the phenomena observed with those of an indigestion, which sometimes leads to fatal results, in conditions to all appearance less dangerous.   M. Sédillot thinks, " *that the presence of air, interposed between the parietes of the abdomen, the stomach, and other viscera, may have occasioned a tendency to peritonitis (une imminence de péritonite), sufficient to annihilate the vital powers of an individual already subjected to different debilitating causes.*"   He suggests the following modifications in the operation and after-treatment :—

1st. To keep the wound of the stomach in apposition with that of the inte-

guments, so as to prevent the access of air to the peritonæal cavity, and to faci-
litate the formation of adhesions between the visceral and parietal serous sur-
faces. This may be effected by using a few points of suture in addition to the
canula. 2nd. To abstain, during the first day, from throwing any injection
into the stomach ; and, during the second day, to inject a little water only, in
order to re-establish the functions of the stomach gradually and slowly.—
(*Gaz. Méd. de Strasbourg*).—Abridged from the *Revue Médico-Chirurg. de
Paris*, Dec. 1849.

ITALIAN CURE FOR LAMENESS.

M. Rizzoli of Bologna has published an account of the two following cases.
In the first, the author was called to treat a recent fracture of the left thigh,
and finding that the right leg was shortened in consequence of an old ill-set
fracture, he treated the recent injury without extension. The patient got well,
and the left leg being now shortened to the same extent as the right, he walked
without lameness.

The second case occurred in the person of a girl of sixteen. One of her legs
was shortened by three inches, in consequence of an old fracture of the thigh.
M. Rizzoli, at the urgent solicitation of his patient, who desired to be cured of
the lameness resulting from this deformity, constructed an apparatus, by means
of which he broke the other thigh-bone. Having treated this fracture so as to
permit shortening, he succeeded in completely removing the lameness.

M. Maisonneuve, in reporting upon these cases to the French Société de
Chirurgie, approved of the boldness of M. Rizzoli's practice, and announced his
readiness to adopt similar means if a suitable case presented itself.—*Gazette des
Hôpitaux*, 3d December 1849.

[For the credit of surgery, it is right to add, that M. Maisonneuve was the
only member of the society who defended the practice.]

WOUND OF THE HEART.

Dr W. S. Bowen, of New York, read notes of the following interesting case
to the Pathological Society of that city :—

A man, aged 21, presented himself, on the 13th December 1848, at the hos-
pital, on account of a stab in the left mammary region, near the sternal end of
the fourth rib, about half an inch from the sternum. The wound had been in-
flicted on the 11th, i. e., two days before admission. On the 17th, there was
acute pain near the situation of the wound; febrile excitement; slight accelera-
tion of respiration ; and the physical signs of pleurisy, with moderate effusion,
were detected.—Venesection, Tart. Antimon. On the 19th, the pain and febrile
excitement had greatly abated. On the 20th, the signs of pleuritic effusion
were still present; some roughness of the first sound of the heart was observed.
On the 22d, fell on the floor of the ward, in a state of syncope, while crossing
it ; afterwards complained of intense pain, and a sense of constriction in the
chest ; pulse feeble and frequent, intermitting after every third pulsation ; ex-
tremities cold ; skin blanched; cold clammy perspiration over face and body ;
extreme thirst. Died, by coma, on 23d December, twelve days after receiving
the wound.

Sectio.—On removing the cartilages and ribs, the left pleural cavity was dis-
covered to be filled with blood ; slight inflammatory redness of the costal
pleura, and the lung compressed to one-third of its natural size. The pericar-
dium was also full of blood, and the heart pushed over to the right side. On
removing the heart, with its appendages, the pericardium was found perforated
within the mediastinal space, two inches below its reflexion from the vessels to
the heart. Around the orifice, for several inches, were the evidences of inflam-
mation, to wit, capillary injection, and shreds of coagulable lymph : this was
more particularly the case upon its internal surface. The heart itself was
found perforated, half an inch to the right of the septum ; the perforation
entered the right ventricle, about a line below the anterior semilunar valve of

the pulmonary artery, passing entirely through this ventricle, and entering the septum ventriculorum, just at the base of the posterior valve, and coming out into the left ventricle, at the orifice of the semilunar aortic valves, one of which was grazed. The orifices were lined with lymph, and admitted the introduction of a good-sized probe.—*New York Journal of Medicine, Sept.* 1849.

In the American Journal of Medical Sciences, for August 1829, there will be found an interesting collection of similar cases, by Dr J. R. Coxe. In some of these, life was prolonged for sixteen or seventeen days. The *Dictionnaire des Sciences Médicales* likewise contains a similar collection.—*American Journal of Medical Sciences, Oct.* 1849, p. 551.

NEW MODE OF CLOSING WOUNDS.

M. Vidal (de Cassis) has lately made some experiments upon the substitution of small elastic forceps of silver wire, instead of the ordinary interrupted suture used for the closure of wounds. The forceps, " serres fines," as he terms them, are made of such a form as to be opened by gentle pressure between the surgeon's finger and thumb, and to shut by their own elasticity. Figures of the instruments, and full particulars regarding their supposed advantages, will be found in the *Gazette des Hôpitaux.* See Nos. for 25th, 27th, and 28th December 1849.

OPERATION FOR INGUINAL HERNIA AFTER ITS REDUCTION " EN MASSE."

A countryman, sixty-two years of age, suffered from a congenital inguinal hernia of the right side, and had for many years worn an ill-constructed truss, which did not prevent the protrusion of the tumour. On the evening of the 15th September 1849, symptoms of strangulation were observed, and the patient, after ineffectual attempts to reduce the rupture himself, sent for a surgeon, who, after some manipulation, succeeded in forcing the whole mass back into the abdomen, and, believing his patient cured, took his leave. Abdominal pain and vomiting continued till next day, when the surgeon again called, and, finding no trace of the hernia, treated the case as one of simple enteritis, by venesection, and the administration of Ol. Ricini and Ol. Olivæ., which were vomited. Purgative enemata failed to move the bowels, the pain and vomiting increased in urgency ; the matters vomited were very fetid, and hiccough commenced. On examining the right iliac fossa, which was the chief seat of pain, it seemed fuller than the corresponding region on the left side, but as the inguinal canal was empty, the cause of the tumefaction could only be conjectured. The surgeon was inclined to think that strangulation still existed, because, when he had pushed back the hernia, he had not been sensible of the gurgling which usually accompanies a successful reduction. On the 17th the patient was kept for two hours in a hot bath, and on the 18th was seen by Dr Melchiori.

He was now in a state of great prostration, and suffering from all the worst symptoms of obstructed bowel. The right inguinal canal was clear. In the right fossa iliac, there was a tumour of the size of an egg, flattened, soft, tender on pressure, resonant when percussed, sinking down when pressed and again rising, moveable slightly in a lateral, but not at all in an upward, direction. When the patient coughed, a small prolongation of the tumour seemed to enter the upper part of the inguinal canal, and to retire when the effort ceased. The surgeon who had been first in attendance stated, that the tumour which he had reduced was small, and that it did not protrude from the external ring. Melchiori made an incision of three inches in length in the direction of the lower half of the inguinal canal. The cord was found covered with a smooth whitish membrane, and when it was denuded, a large sac was opened into, containing a few spoonfuls of serum, and the testis. This sac terminated above at the *internal* ring, by a smooth blind extremity. When the finger was pushed upwards, and the patient coughed, something was urged against it at the upper part of the canal from the inner side of the cord. Drawing down the cord, and forcing almost the whole finger through the internal ring, he succeeded in feeling the hernial sac, but being unable to make it descend, he enlarged the ring by

incision, and seized a portion of the sac which now presented itself when the patient coughed. Some serum escaped on opening the sac; it was drawn downwards, and the stricture was felt to be at its upper part. The stricture was divided in an upward direction, and a piece of dark coloured small intestine, about three inches long, carefully returned into the abdomen, while the sac was still held outside the ring. The patient ultimately did well.

Melchiori believes that the congenital hernia had, in this case, been cured by the closure of the tunica vaginalis; that the preternatural wideness of the internal ring permitted the descent of an ordinary hernia some years afterwards, and that the rupture-truss confined the tumour within the limits of the canal. The stricture was formed by a thickening in the neck of the sac, and, of course, was not relieved when the tumour was reduced.—*Gazzetta Medica Lombarda,* 26th November 1849.

MIDWIFERY, AND DISEASES PECULIAR TO WOMEN.

DISPLACEMENTS, ETC., OF THE UTERUS. BY PROFESSOR PAUL DUBOIS.

In the following notice we propose to give a report of certain selected parts of a long speech of the able Parisian Professor of Midwifery before the Academy of Medicine :—

" There can be no longer any doubt that anteversions and retroversions of the womb are accidents of frequent occurrence. But, as to their relative frequency, I cannot express any decided opinion of my own. Some years ago, there was raised between M. Blandin and myself a discussion on this point; he believed anteversion to be much more common than retroversion, plausibly resting his opinion on the fact, that anteversion consisted merely in an exaggerated state of the natural inclination of the womb forwards. For my part, I expressed quite a contrary opinion, and brought forward, as the cause of the displacement, the driving of the uterus backwards by the distension of the urinary bladder,—a state of distension which is often carried to a very considerable extent, in consequence of the natural reserve of women, and the constraint imposed by our social habits. At the time of this discussion, I made a resolution to keep a detailed list of cases of displacement according as they presented themselves to me. The list was long when I ceased to keep it, but it afforded a result in favour neither of my own nor of M. Blandin's opinion. The retroversions and anteversions were found equal in point of number. Nevertheless, I am still inclined to believe retroversion to be the more common of the two forms of displacement.

" On several occasions, in the course of this discussion, the words inflexion and displacement (*deviation*) have appeared to be used synonymously, if not in signification, at least in the language of some of our colleagues; and I shall be astonished if this confusion, involuntary though it may be, has not caused some misunderstanding among those who, here and elsewhere, have entered into the discussion of this subject.

" Inflexion denotes, as the word itself implies, an alteration in the form of the uterus, which is in fact folded in two in the direction of its surfaces; but the word does not in any way imply a change in the situation or direction of the organ, although these latter changes may simultaneously co-exist. Displacement, on the contrary, implies a change in the situation and direction of the uterus, not an alteration in its form.

" Inflexion, when it is well marked, is generally a congenital affection, and one connected, as M. Jobert has justly remarked, with a series of other changes. Displacement is most frequently an accidental affection. Nevertheless, inflexion is sometimes acquired, and under certain circumstances it is a result of displacement. For example, when the fundus of the uterus is much displaced backwards, it may depress the posterior peritoneal cul-de-sac, and descend even below the level of the cervix uteri.

" Now it is difficult to conceive how so marked a displacement could be pro-
duced without the organ undergoing a certain degree of *incurvation*, but this
change is not of the same nature as the real *inflexion*. In inflexion, the fold-
ing of the uterus is, if I may so speak, the capital pathological fact; in dis-
placement, it is the change of position which constitutes the disease. The *in-
curvation* is in general a secondary and accessory phenomenon.

" In inflexion, the volume of the uterus is often less than in the normal con-
dition, but the walls of the organ have their ordinary density.

" In displacement, complicated with incurvation, the volume of the uterus is
often increased, and its density diminished, the displaced part presenting a
boggy softness, and being frequently more sensitive than in the normal
condition.

" Inflexion is generally an incurable affection; incurvation is not absolutely
so, it may be rectified, but certainly with but slight chance of permanent
success.

" Inflexion of the uterus does not appear to me to be capable of exercising of
itself any unfavourable influence upon the health of the woman affected with
it; it is an anomaly always innocuous, and which does not cease to be so,
unless from some cause totally unconnected with any chronic uterine affec-
tion. This cause is generally partial occlusion or stricture of the passage des-
tined for the transmission of the menstrual flux. This abnormal condition of
parts gives rise to sharp pain, continued during the whole catamenial period.
The co-existence of these two affections, the inflexion of the uterus and dys-
menorrhœa, is almost constant. As to prolapsus, and the displacements, ante-
version and retroversion, I think that, for my part, I can give them the same
harmless character in all cases where they are not in an exaggerated condition.
A contrary opinion is, I know, very generally entertained. It is expressed in the
memoir of M. Baud, and in M. Hervez' report and other writings; it has also
been stated in the course of this discussion by MM. Jobert and Amussat; but,
although it is almost universally received, yet I agree with M. Lisfranc in
thinking that these deviations have no other influence than what they derive
from certain pathological complications, and in particular from a concomitant
state of chronic inflammation.

" Two sets of causes are commonly cited in explanation of the injurious ef-
fects of prolapsus or of displacement of the uterus; firstly, the dragging upon
the ligaments of the uterus,—that is to say, upon the parts which retain the
organ in position; and secondly, the pressure exerted by the displaced viscus
upon the various organs contained in the pelvis. But when you consider the
natural laxity of these retaining ligaments, which permit of the greatest free-
dom of motion—when, above all, you compare this freedom of motion with the
very limited sphere within which the motions of the uterus are confined—it is
easy to see how little reason there is to believe in the alleged existence of pain-
ful traction exerted upon the ligaments by the displaced uterus.

" These displacements are frequently caused by the development of tumours
in the pelvis. These tumours drive the uterus forwards or backwards, accord-
ing to circumstances; and it is certain, that, in most cases, although there is
distinct displacement of the organ, the patients do not seek for medical advice
till the increasing size of the abdomen causes inconvenience.

" As to the pressure exerted by the displaced viscus upon the neighbouring
organs, it is easily seen that this is not the cause of the symptoms attributed to
it; firstly, because the volume of the uterus, simply displaced, is not such as
to cause actual compression of the pelvic organs; and further, because this
pressure is quite easily borne in a great number of cases where tumours much
larger than the displaced uterus occupy the greater part of the pelvic cavity,
and inevitably compress the contained viscera.

" These displacements may possibly become the cause of severe suffering un-
der two special conditions; on the one hand, when the organs with which the
uterus is in contact are the seat of inflammation; and, on the other hand, when

the body of the organ, in the case of retroversion,—the neck in anteversion, is the seat of engorgement or well-marked irritation.

" Under these circumstances, the friction caused by the passage of the fecal matters, upon the diseased parts, may cause acute pain. Again, it may happen, and such cases are not very rare, that adhesions are formed between the displaced fundus uteri and the rectum ; and that the excretion of the fecal matters is in consequence rendered difficult and dangerous.

" My colleagues will not, I hope, imagine that I have founded upon theory merely an opinion so opposed to that which is generally received. Numerous cases, scrupulously well observed, both in women enjoying good general health, and who have consulted me for complaints quite unconnected with any uterine affection ; and also in women who had been treated by me for catarrhal inflammation, of which they were cured, but who still had the uterus displaced without their having the least suspicion of it—these cases, I say, first originated in my mind the opinion I have brought forward, and further reflection has explained and confirmed it.

" In addition to this abnegation of the symptomatological importance too indiscriminately ascribed to uterine displacements, I shall add another ; it is in relation to the influence exerted by engorgement, not only in producing, but also in determining the direction, of the morbid inclination of the uterus. Who does not see that, if this opinion were well founded, there could be no early pregnancy that was not complicated with marked prolapsus and displacement of the uterus, for the two circumstances are combined which are generally regarded as most favourable to the production of these pathological conditions, namely, general increase of volume, and a preponderating increase in thickness, in one part of the uterine walls."—*Gazette des Hôpitaux*, 24th Nov. 1849.

COMPLETE INVERSION AND EXPULSION OF THE UTERUS.   BY DR THOMAS H. YARDLEY.

At five o'clock P.M., January 5th, I found on my slate a message, requesting my immediate attendance on Mrs H———, a lady whom I had engaged to attend in her accouchement. 1 hastened to her residence, where I learned she was alarmingly ill ; that she had been delivered of the child for at least two hours ; that the afterbirth had not yet come away, and that she had fainted repeatedly.

I found her lying across the foot of the bed, entirely pulseless, skin cold and clammy, and her voice nearly inaudible.   Her attendants were in great consternation, and one of them sat at the foot of the bed, holding on to the cord, for the purpose, as she said, of preventing it from "going up." I directed some brandy and water to be given her immediately, and on passing my finger along the cord, I came in contact with a large solid body, which I at first thought was another foetus protruding from the vagina ; but a very slight examination satisfied me it was the placenta, attached to the inverted uterus, which had passed entirely out of the vulva.

I immediately separated the placenta, which was very slightly adherent, and then placing my fingers in a conical position, I pressed them against the middle of the inverted uterus, and returned it to its proper position with facility.   Another difficulty now presented itself ; the uterus did not manifest the slightest disposition to contract, and was so flaccid that I felt satisfied it would not retain its position if I withdrew my hand ; I therefore kept it in the cavity of the uterus, and gently irritated its internal surface.   The hemorrhage was very slight ; but the patient was already pulseless, and the attendants so much alarmed as to afford very little assistance.

I directed stimulating frictions to be made to the extremities, and sent one messenger for my friend Dr Janney, and another for some vinous tincture of ergot, which I gave in doses of a teaspoonful every ten minutes, with a tablespoonful of brandy and water.

I retained my hand in the uterus half an hour before 1 felt the slightest contractions ; they then came on, at short intervals, with increasing strength ;

and, after Dr Janney arrived, we considered it safe to withdraw my hand. Dr Janney placed his hand on the abdomen, and satisfied himself that the uterus continued to contract ; the patient, however, continued so ill, that he gave me his valuable assistance for two hours, during which time we plied her freely with brandy, camphor, carbonate of ammonia, and other stimulants, and applied cloths wrung out of hot capsicum and turpentine to her extremities. Under this treatment she gradually rallied; but it was not until after midnight that I considered her sufficiently revived to justify my leaving her.

Her convalescence was tedious, but perfect; and the child did well, though there was not the slightest secretion of milk.

I am aware that many authors of merit recommend that the uterus should be reverted before the placenta is detached ; and this is no doubt proper practice where the uterus is within the vagina. But where an unusually large placenta, as in this case, has passed entirely out of the os externum, I think it would be a difficult task to force it back again, and further, I doubt the propriety of making the attempt, particularly as I am not aware of any evil having resulted from first separating the placenta ; and in many cases in which it has been attempted to replace the uterus with the adherent placenta, it was found impossible to succeed. Professor Meigs, in his recent work on obstetrics, records a case in which both he and the late Professor James made the attempt, without effect—and I am sure that no one acquainted with these gentlemen could doubt their skill and perseverance ; but they were compelled to detach the placenta before they could replace the uterus.

What influence traction of the cord had in this case, I am unable to determine. The patient was an exceedingly delicate woman ; this was her second accouchement, and she had recently undergone much bodily fatigue, and mental anxiety and depression, in consequence of the illness of her husband, who had died a few weeks previously of phthisis. She had taken a dose of castor oil in the morning, which operated freely, and so rapid was her labour, that she had barely time to get into bed before the child was born.—*American Journal of Med. Sciences,* July 1849.

NEW METHOD OF PLUGGING THE VAGINA, &C. BY M. DIDAY.

This novel plan of arresting uterine hemorrhage consists in the use of a bladder of vulcanized India-rubber, having attached to it a long pipe of the same material. When empty and compressed, as for introduction into the passages, it is not larger than the finger. After its introduction, the mouth is applied to the end of the long projecting pipe, and the caoutchouc bladder in the vagina is inflated to any extent deemed expedient. Nothing is required to keep this instrument in its place; its size, when inflated, and its adaptation in shape to the cavity of the vagina, are sufficient for this purpose. In a case which M. Diday has recorded, he made use of this instrument for sixty-four hours, and although, during all that time, it was lying among the warm and decomposing blood in the vagina, it lost none of its original power.

M. Diday proposes to use his newly discovered instrument in cases of post-partum hemorrhage, introducing it into the uterus itself, and there inflating it. He thinks that this will have a beneficial effect, although he knows the danger of internal uterine hemorrhage, and the evils consequent on using a vaginal tampon in cases of flooding after labour at the full time.

[The instrument of M. Diday, although new in so far as it is made of caoutchouc, is merely the perfection of an old plan, namely, that of inflating the prepared bladders of various animals in the vagina, by means of water thrown into them. His proposed application of this plan to the arrestment of post-partum hemorrhage, we are sure, will, if tried, lead only to disappointment and danger. The application of the bladder to the mouths of the open uterine sinuses, will have no effect in stopping hemorrhage in an organ so capable of dilatation as the uterus after delivery.

We remember seeing the autopsy of a case of fatal internal uterine hemor-

rhage at the end of the eighth month of pregnancy,—before even the rupture of the bag of membranes. M. Diday's inflated bladder could not possibly be better adapted to the interior of the uterus than the perfect and entire ovum. The case was one of deep interest, and may be opportunely related here. The woman, a patient of Mr Figg, fell in labour early in the morning, and as the os uteri expanded, a little hemorrhage flowed from the vagina ; so little, how-ever, as to cause no great alarm. The constitutional effects of the hemorrhage appeared, however, to become disproportionally severe, and Professor Simpson was sent for; but before he could arrive the patient had died. On making the examination of the body next day, the os uteri was found dilated to the size of a half-crown, the bag of membranes entire, the placenta entirely separated from the uterus, and a very large quantity of serum and clot lying between the whole surface of the ovum and the walls of the uterus]

Part Fifth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Session XXIX.—Meeting III.—*Dec.* 19, 1849.—J. Syme, Esq., in the Chair.

TUBERCLE OF THE UTERUS.

Dr Simpson produced a specimen of tubercle of the uterus. The patient from whom it was taken had been, for some time before death, under the care of Dr Skae, in Morningside Asylum. A deposit of tubercle lined the inner surface of the uterus and of the Fallopian tubes ; the ovaries were free.

Dr Skae mentioned that his patient was about forty-five years of age, and that during her insanity she manifested symptoms of sexual excitement.

CANCER OF LIVER AND PERITONÆUM.

Dr Bennett showed to the society specimens of cancerous disease of the liver and peritonæum, together with an aortic aneurism, taken that morning from the body of a man, who had died in the clinical ward of the Infirmary. The symptoms during life had closely simulated those of cancer of the pylorus ; and, as a hard and somewhat moveable tumour was felt in the region of the pylorus, Dr Bennett had considered the case as one of cancer of this orifice. Shortly before the patient's death, crepitation was detected over the lower lobe of the left lung. Death was caused by the rupture of an aortic aneurism into the left pleura. On dissection, there was found slight thickening of the pylorus, cancerous stricture of the œsophagus, and extensive cancerous disease of the liver and peritonæum. One mass depended from the lower margin of the liver, was moderately moveable, and was situated immediately in front of the usual position of the pylorus. The lower lobe of the left lung was infiltrated with blood, proceeding from the aneurism, and this afforded an explanation of the crepitation heard during the patient's stay in hospital.

TUBERCLE OF BRAIN.

Dr Bennett also showed a cerebellum, containing a mass of tubercle, of the size of a walnut. The specimen was obtained from the brain of a patient, who had recently died of typhus, in the Infirmary. His symptoms during the fever had not led to the suspicion of any organic disease of the brain. In the apex of each lung was found a deep puckered cicatrix, probably corresponding with the former seat of a tubercular deposit, formed at the same time with that in the cerebellum.

RECURRENT TUMOURS.

Mr Syme called the attention of the society to a kind of tumour, which he had now frequently met with, and of which he produced a recent specimen. When cut into, it exhibited a yellow-grey appearance, somewhat resembling adipose tumour ; but had a firmer feel, and seemed to contain some fibrous tissue. The peculiarity of this class of tumours was, that they were apt to grow again after removal, and although certainly not cancerous in the first instance, were apt ultimately to degenerate, fungate, and even cause the death of the patient. When one was removed, several new ones were sometimes observed to spring up in the same situation. Dr Douglas Maclagan had described these tumours in the *Edinburgh Medical and Surgical Journal.* The patient from whom the tumour exhibited had been removed was a gentleman of sixty years of age. Nine years ago, a tumour had been removed from beneath his right clavicle ; the wound healed well ; but the tumour again grew, and, after the lapse of four years was again excised. The second wound also healed ; but the tumour recurred again, and was a third time excised. This species of recurrent tumour was more common on the trunk of the body than on the extremities.

Dr Bennett, who examined a portion of the tumour under the microscope, stated that this was an example of those growths which Lebert has termed "fibro-plastic." They were not malignant—*i. e.,* contained no histological element which was not to be met with in the healthy body.

Mr Syme again expressed his conviction, that tumours which, when first formed, were not malignant, might, if neglected, or improperly interfered with, ultimately take on a malignant action. In illustration, he alluded to the progress of certain cases of enchondroma, and of those growths commonly termed chronic mammary tumour. These growths might remain stationary, or progressively enlarge for many years ; ultimately they were frequently observed to degenerate, to assume a malignant character, and to be reproduced after removal.

Dr Bennett explained that, in his acceptation of the term "malignant," he wished to include the idea of a new growth, the production of a new tissue, foreign to the healthy state. He did not term the degeneration of enchondroma *malignant,* because it was merely a softening of the cartilaginous element. The production of a new tissue characterised by the presence of cancer cells was what he wished to express by the word "malignant." It was possible that tumours, not originally cancerous, might become so at a later period ; and he believed that careful observation, and the use of the microscope, would yet decide this controverted point.

Mr Roberts had at present under his care a curious case of recurrent tumour, which seemed to sprout from the alveolar process of the lower jaw, where a tooth had been lost. The growth was about as thick as a crow-quill, of firm consistence, and tapering to a point. It had grown again and again, after removal. Mr Roberts was inclined to attribute the obstinacy of this case to the presence of a diseased scale of bone.

CHOLERA (?) CORPUSCLES.

Dr Robertson exhibited, under the microscope, a specimen of the so-called cholera bodies, from some fluid from the intestines of a cholera patient, recently sent to Dr Bennett, by Mr Swayne of Bristol. The report of the committee of the London College of Physicians had completely exploded the theory which connected these bodies with the pathology of cholera. The orgin of many of the bodies described by the Bristol microscopists, and recognised elsewhere, had been clearly pointed out ; yet some mystery seemed still to hang over the large brown corpuscles figured by Mr Swayne, and now exhibited. Mr Berkeley, the eminent mycologist, had not as yet determined their precise nature. As their very presence was quite exceptional, they, of course, could not be admitted as the cause of cholera.

EDINBURGH OBSTETRIC SOCIETY.

SESSION IX.

MEETING I.—*December* 12, 1849.—Dr SIMPSON, President, in the Chair.

FATAL VENOUS HEMORRHAGE FROM THE PUDENDA.

Dr Simpson related the circumstances of a fatal case of this nature, as reported to him by *Dr Kyle of Dundee*, who was called to see the woman, but did not arrive till after she had expired. No grounds could be discovered for any suspicion that the woman had received a wound. She was in the lower ranks of life, but respectable, and living on good terms with her husband and neighbours. She had been straining at the night-stool when the hemorrhage came on. A large quantity of blood was found about her person;—it had flowed from the genital organs. On making the autopsy, Dr Kyle paid particular attention to the state of the uterus, which was fully expanded in pregnancy; but no effused blood was discovered in or around it. On examining the vagina, Dr Kyle found a recent aperture in one labium, which, on further dissection, he traced into a large vein.

Dr Simpson alluded to the fact, that there was at the root of each labium a plexus of very large veins, which extended some way into the vagina. One of these veins, probably in a varicose state, had burst in this instance. Probably the coat of the vein was thickened, as well as dilated, and, consequently, it would not collapse, as veins usually do, but remain open like an elastic artery.

Dr Simpson further stated, that the case seemed to him particularly interesting and important in relation to medical jurisprudence. A number of criminal trials had taken place in Scotland, within the memory of the members, in consequence of women, generally, but not always, pregnant, having died from hemorrhage from the pudenda, similar to the above. In most or all of these cases it had been averred that the wound had been inflicted, with criminal intent, by the husband or others. Dr Watson has recorded two or three such cases in the " Edinburgh Medical and Surgical Journal;" Dr Seller has recorded others; and Dr S. himself had seen the examination of the body in two criminal cases of this kind. In both, the women bled to death from very small wounds of the pudenda. He was not aware that in any of the five or six cases of late years, tried before the Scottish courts, the plea of the apparent wound being a spontaneous rupture, had been adduced. But such a case as this, that has lately occurred at Dundee, had evidently important bearings on the value of such a plea.

Dr Thomson stated that, several years ago, he had been called in by Dr Martin Barry, to a case of profuse flooding in an out-patient of the Maternity Hospital. The patient, a married woman æt. 19, had already borne two children, the last only six weeks before the accident. Dr Barry saw her eight hours after the bleeding had commenced. He found her in a very weak and anemic condition; the skin blanched, the lower extremities already becoming cold, the countenance very anxious, much jactitation, pulse rapid, and extremely weak and fluttering. The vagina was immediately plugged, cold cloths were applied to the abdomen and vulva, and stimulants and astringents administered by the mouth. After some hours the patient had recovered to such an extent as to admit of her being turned to her left side, and on examination, a wound was discovered large enough to admit the finger to the depth of about half-an-inch, in the anterior wall of the vagina, at the union of its upper with its middle third. On the following day, Dr Thomson found her in an extremely depressed state, but subsequently she made a good recovery. This woman's husband, a cattle-drover, had been long absent from home, and on the evening of the accident his visit lasted only half-an-hour. During that time he had been alone with his wife, and immediately afterwards the bleeding com-

menced. Dr Thomson stated that he had never seen any person more nearly dead from loss of blood ; and if death had actually resulted, the existence of the wound might have given rise to suspicions of criminal violence having been resorted to.

Dr *Weir* asked if any of the members had seen dangerous venous hemorrhage come on spontaneously in other regions of the body ?

Dr Wood stated that, last summer, when passing near the stepping-stones over the Water of Leith, at Inverleith gate, he was stopped by a police officer, who begged him to accompany him to see a man whom he had found lying by the river side in a pool of blood, and almost dead. The man had been straining at stool, when a varicose vein in the leg burst externally, giving issue to a large quantity of blood, and causing him to faint. On examination, Dr Wood discovered, on the side of the calf of the leg, a minute opening, scarcely so large as a pin-head, leading into a varicose vein, from which the blood had proceeded. The syncope had caused temporary arrest of the bleeding, and while stimulants were freely exhibited, its return was prevented by firm pressure, with a small pad, covered with a halfpenny, and kept in situ by a firm bandage. This case was interesting, as showing that dangerous hemorrhage might come on spontaneously, from varicose veins in other regions of the body as well as the vagina.

Some conversation ensued as to the most suitable mode of arresting the hemorrhage in such cases as had been related. There could be no doubt that compression by a vaginal plug, or otherwise, was the simplest and readiest method of stopping venous hemorrhage from the pudenda as well as from other parts of the body.

PLACENTA EXPELLED BEFORE THE CHILD.

A letter was read from *Dr Kyle of Dundee*, relating a case of this nature. Mrs C., æt. 38, multipara, was taken with labour pains, at 6 A.M. These continued increasing in strength, and at regular intervals, till 11 o'clock, when the liquor amnii came off, along with a large quantity of blood. At 3 P.M., Dr Kyle was sent for by the midwife in attendance. He found the patient in a very weak state,—pulse 110, weak, countenance pale and bloodless, but the uterus continued to act powerfully and regularly. Upon examination the cord, already pulseless, was found lying in the vagina, as well as the greater part of the placental mass. The midwife informed Dr Kyle, that after the placenta had come well down into the vagina, the hemorrhage entirely ceased. On removing the placenta, the right arm of the child was found presenting, and the shoulder was pressing well into the brim of the pelvis. With the aid of Mr Drummond, the patient was put well under the influence of chloroform, and the woman was safely and easily delivered by turning. She never had a bad symptom, the recovery being uninterrupted.

ON THE USE OF THE EXPLORING NEEDLE IN THE DIAGNOSIS OF DOUBTFUL FORMS OF PELVIC AND OTHER TUMOURS. BY PROFESSOR SIMPSON.

Those authors who, some years ago, wrote at great length upon acupuncture, as Beclard, Cloquet, Carraro, &c., all spoke of the impunity with which they found that acupuncture needles could be introduced into the muscles, vessels, and even the viscera of the living body. It was well known that small punctured wounds did not bleed, and the parts punctured generally closed immediately, and left little or no trace of the separation of their tissues by the puncturing instrument, provided it were small.

Taking advantage of the knowledge of these facts, it has been found that using a small grooved needle, or very slender trocar, we can introduce it into various morbid parts, so as to ascertain the nature of their contents. Surgeons had used such exploring needles, for this purpose, in cases of doubtful tumours, in order to ascertain whether they were abscesses, or cysts, or aneurisms, &c. They have been used to explore even large aneurisms without any dangerous result. Dr S. alluded to a case in which a celebrated surgeon was showing to

his pupils the use of the exploring needle, in detecting matter in what was supposed to be an inflamed bubo, before laying it open. Air, however, rushed out, instead of pus, showing the swelling to be formed by the skin inflamed over a hernial sac.

Dr S. mentioned that he had repeatedly used the exploring needle to detect the nature and contents of various kinds of pelvic tumour, when no other means of diagnosis were sufficient for that purpose. He especially adverted to its advantages as a means of diagnosis in some doubtful cases of pelvic abscess, and ovarian tumours, and in cases in which tumours existed about the cervix uteri, the cystic or other nature of which it was otherwise impossible to determine. Would it serve to diagnosticate cases of extra-uterine pregnancy, either by the instrument striking against bone, or by any contents that might pass through the tube?

The instrument which Dr Simpson employed was that figured in the accompanying woodcut. It was simply a very slender silver trocar and canula, the former tipped with a very short steel point, of the form of that of a graving instrument. The tube of the trocar is open for nearly an inch at one side at its point (as is seen in the woodcut), so as to admit more easily of the escape through the canal of the tube, of any fluid in which its point may be placed. Sometimes Dr S. had applied an exhausting syringe to the outer end of the instrument, in order to produce the flow, along its tube, of any more viscid fluid. Figure a shows the canula, or tube of the instrument ; b, the trocar ; and c, the canula, with the trocar introduced as ready for use. Thin fluids, like those of most ovarian cysts, flow readily along the tube, and can be recognised by their microscopic and other characters. When introduced into a sac containing pus, generally a few drops only of the fluid enter the tube of the instrument, from which, however, it can be readily forced,
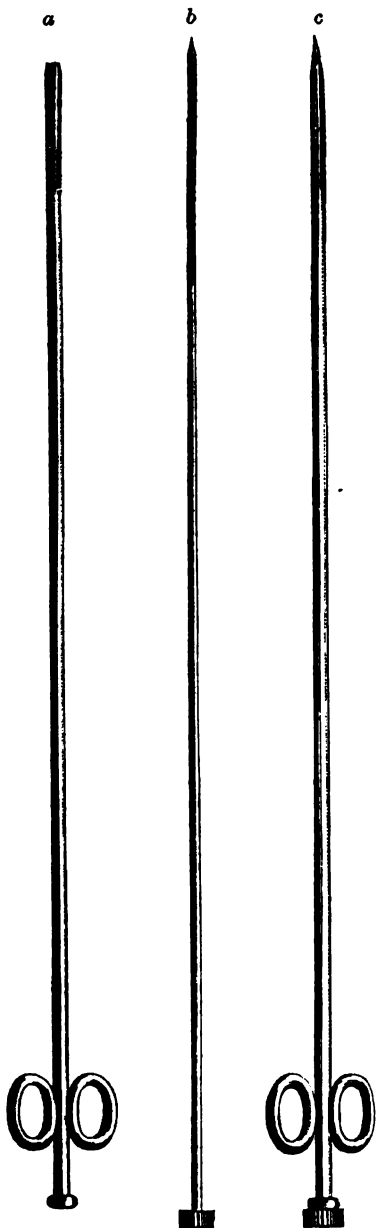
after withdrawing the instrument by blowing through the tube. If our microscopic characters of specific tumours and morbid structures, were more exact than they are at present, the pathologist might ascertain the nature of most morbid tumours that might appear in the living body, by the use of such an instrument, for he could remove by it a sufficient amount of its structure or contents for histological purposes.

Some remarks having been made,· by different members, on the utility of chloroform in the treatment of puerperal mania and delirium tremens, the following case was related :—

THE USE OF CHLOROFORM IN ACUTE MANIA.

Dr Moir related the following interesting case :—A servant maid who had been confined to her room for about a fortnight, from a feverish attack, began, at the end of that time, to show some symptoms of mental derangement. She wished to leave her room and go home—was with difficulty prevented from leaving the house—and gradually became very wild and outrageous, throwing off all her bed-clothes, tearing her own night-clothes, shouting out in the most violent manner, and apparently unconscious of the persons who were about her.

Large opiates, with antimonials, were administered for nearly thirty-six hours, without inducing sleep, or in any way mitigating the symptoms, when it was thought that by putting her under the influence of chloroform, the effects of the opiates might be obtained. She was, accordingly, put under its influence very easily, but soon awoke as ill as ever. It was immediately re-administered, and its action kept up for nearly three-quarters of an hour, when it was stopped, and she continued asleep for above four hours. When she awoke she asked for a drink, and again fell asleep for several hours, and awoke quite well, though very weak. She has continued well since.

VARIETIES.

Royal Infirmary.—At the recent meeting of contributors, it was stated that the total number of patients treated in the institution during the year 1848-9, was 4006. Of the above, 726 were cases of fever, and 132 of cholera ; and of each 88 proved fatal. The average daily number of patients in the house amounted to 322. In the year 1846-7, the total cases were 7705, and in 1847-8, 7766 ; so that the year terminating on 1st October 1849, presents, in favourable contrast with its immediate predecessors, a decrease of about 3700. The managers find themselves in the novel position of having to report a surplus of annual revenue above expenditure. It is in contemplation to build considerable additions to the hospital ; and this good work will be speedily commenced by the erection of a new wing to the present surgical department. The new building will stand upon an elevated piece of ground, presenting every facility for drainage, and will front Drummond Street. It will supersede the necessity for several out-buildings, in which surgical cases are at present rather uncomfortably accommodated, and which will be removed. The surgical hospital, in its new form, will contain beds for 200 patients. If funds are still at their disposal after the completion of the surgical, the managers propose to erect a new wing to the medical department ; and, in conformity with plans in their possession, ultimately to rebuild the whole house, turning its front to Drummond Street, which would undoubtedly be a great improvement. A vacancy has recently been caused in the· medical staff of the institution, by the resignation of the senior physician, Dr George Paterson, who has been induced to settle as a physician in Tiverton.

Medical Police.—Dr Solaville, a Parisian physician, is making grievous complaints through the journals, of the conduct of some republican police-officers, who invaded his domicile in force, penetrated to his *sanctum sanctorum*,

where he happened at the moment to be receiving patients, and instituted a
search for smuggled cigars, which, however, were not to be found. An Eng-
lishman's house is his castle, and A 1 himself dare not indulge in such guager-
like eccentricities in the library of a British M.D. " Ah liberty !" said Ma-
dame Rolland, " what crimes are committed in thy name !"

Apropos of policemen. In a scuffle which recently took place in our city
between some medical students and the police, a stethoscope rolled out of the
hat of one of the former. He was immediately arrested on the charge of having
about his person a LIFE-PRESERVER.

MEDICAL JOURNALISM IN GERMANY. — Notwithstanding the late political
convulsions into which Germany has been thrown, its twenty-four universities
are still vigorous ; and if the professors have suffered somewhat for their ex-
treme opinions in the good opinion of their governments, they have lost nothing
in that of the students.   The number of medical journals amounts to 60,
forming a total of 3,500 sheets, or 56,000 pages, annually. The subscription to
them amounts to 250 thalers, or about L.40 a-year.   Almost all the branches
of medical science have their special organs, but there is no journal dedicated
exclusively to the support of a university or large hospital.—L' Union Médi-
cale, Dec. 8, 1849.

INCREASE OF SYPHILIS IN GERMANY AND FRANCE.—Since the regulations for
the toleration of prostitutes have been suppressed in Berlin, there has been an
extraordinary increase of venereal disease among the population. The same
thing was observed in France during the latter part of the year 1848, on ac-
count of the negligence of the police for some months after the revolution. Of
late, the Polish and German refugees, who have entered Strasburg in large
numbers, have propagated syphilis to an unusual extent in that city. Most of
these were affected with ulceration, and a short time after their arrival,
chancres, which had been previously rare in the hospitals, became common, a
circumstance which still further points out the distinction between the virus
of chancre and that of gonorrhœa.—Ibid. Dec. 4, 1849.

SURGICAL INSTRUMENTS FOUND IN POMPEII.—Among many curious instruments
found during the modern excavations at Herculaneum and Pompeii, M. Vulpès
of Naples, describes several kinds of forceps, pincers, and scissors,—forcipes,
forpices, and forfices ; instruments resembling the well-known cutting-pliers ;
canulæ for the operation of abdominal paracentesis ; blunt probes ; a kind of
probe terminating in a spatula, with a split in it, apparently adapted to support
the tongue during the operation of dividing the frænum linguæ ; urethral
sounds, with a double curve like those of J. L. Petit ; uterine and anal specula.
Among the forceps there is one pair of great size, and apparently meant to be
used in dissection ; another is provided with a metallic ring, by means of which
the blades can be closed ; a third bears the cutler's name upon the side : thus,
Agathangelus F (fecit). Of two hundred instruments now collected, only
twenty-one are of iron or steel, all the rest being made of bronze. A lancet only
has a silver blade.   The bronze instruments in the Naples collection are all
very hard, which M. Vulpès attributes to the predominance of copper over tin
in the metal employed in their construction.—Revue Med. Chir. de Paris.

MEDICAL COMMUNISM.—At Berlin, an association of 6000 Communists is said
to have been formed, and to include a certain number of medical men, each of
whom is to exercise medical jurisdiction over a certain number of families,
and, in important cases, to consult with one or more of his colleagues. Once
a week all these family practitioners are to meet, and communicate to each
other the fruits of their observation and experience, while they make an ami-
cable division of fees.   The medical council, in conjunction with the ordinary
directors of the society, is charged with the inspection of habitations, and
examination of articles of diet. These Socialists hope to cover all sanitary ex-
penses by levying a monthly contribution of thirty centimes—i. e., 3¼d.—from
each member of their community.

ADULTERATION OF DRUGS.—The government of the United States has ordered

tests to be applied to all drugs which are imported and pass through the custom-house. This step had become indispensable, in consequence of the monstrous frauds committed in the drug market, in which the sulphate of quina publicly sold sometimes contained not a particle of quina, while simpler articles—*e. g.*, laxative pills—were adulterated to such an extent as to be often useless.

CRETINISM IN SARDINIA.—From a report lately presented to the Sardinian government, it would appear that more than 7000 persons are affected with cretinism in that country. The disease is spread over twenty-two provinces.—*L'Union Médicale*, Nov. 24, 1849.

DEATH OF PROFESSOR GIACOMINI.—The *Union Médicale* announces the death of Professor Giacomini of Padua, one of the most distinguished medical writers in Italy. An analysis of his pathological views regarding cholera, was published in the "Monthly Journal" for 1848.

A HOMŒOPATHIC FEE.—One of the most celebrated homœopathists of Paris has been "*spirituellement mystifié*" by a patient. A well-known General had placed himself under his care for a gastralgia, which had proved rebellious to allopathic treatment. The homœopath promised marvellous things, but had no better success than the allopath. After three months of globules, the General became impatient, and expressed his impatience in very military style. The homœopath asked another month's trial, which elapsed, and with it all hopes of amelioration. The man of war became angry, and, in his wrath, addressed the following letter to the man of globules :—" Doctor, I have passed four months in swallowing your vile seeds, veritable simpleton's grain. I I am much obliged to you. Keep them for others. You deserve, however, a homœopathic honorarium. I therefore inclose the most extreme dilution of our monetary system." The letter contained one centime.—*Bulletin de Thérapeutique.*

BOOKS RECEIVED.

Case of Comminuted Fracture of the Pelvis. By George D. Gibb, M.D. Montreal, 1849.

Rational Medicine : a Vindication. By Alexander Wood, M.D. Edinburgh, 1849.

A Few Suggestions on Consumption. By Robert Hall, M.D. London, 1849.

Surgical Anatomy of the Arteries. By the late Valentine Flood, M.D. New Edition, by John Hatch Power, M.D. Dublin: Fannin & Co. 1850. 8vo. Pp. 190.

Eruptions of the Face, Head, and Hands. By T. H. Burgess, M.D. London: Renshaw. 1849. 8vo. Pp. 256.

Notes of Experiments, with Thoughts on Electricity. By Charles Chalmers, Merchiston. Edinburgh. 1850.

On Pneumo-Thorax. An Essay. By H. M. Hughes, M.D. London, 1844.

Contributions to the Physiology of the Alimentary Canal. By William Brinton, M.D. London, 1849.

Zur Behandlung der fressenden Flechte (Lupus). Von I. Hoppe. Bonn, 1849.

On the Operation for Strangulated Hernia. By Henry Hancock, F.R.C.S.E. London: Churchill. 1850.

Contributions to Mental Pathology. By James George Davy, Licentiate of the Royal College of Physicians, London. London : Churchill. 1850.

Has Marischal College, in New Aberdeen, the Power of conferring Degrees in Divinity, Laws, and Medicine? Pamphlet. Aberdeen. 1850.

TO CORRESPONDENTS.

Communications have been received from Dr Jenner, and Dr Hughes, of London; Dr Redfern, of Aberdeen ; Dr Wise, of Banbury ; and Dr John Moodie.

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ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Cases of Disease of the Chest, involving Effusion into the Pleura, and some Difficulties of Diagnosis.* By H. M. HUGHES, M.D., Assistant-Physician to Guy's Hospital.—(*Continued from p.* 29.)

CASE IV.—*Tumour in the Anterior Mediastinum, with Effusion into the Left Pleura—Paracentesis-Thoracis several times performed—Inspection.*—(The history from notes of Mr Kingsford.)

Richard D——, aged thirty-one, was admitted into Guy's Hospital under my care August 16th, 1849. He was by occupation a coach-maker, and had been so for sixteen years—residing in Soho. He stated that he enjoyed uninterrupted good health till eight months since, when he first noticed a dull pain in the epigastrium, and the left side of the chest anteriorly, accompanied with cough and difficulty of respiration, but not increased upon deep inspiration. A fortnight since he was attacked with vomiting, which occurred at frequent but irregular intervals. He had never suffered from dysphagia, palpitation of the heart, œdema of the lower extremities, or of any other part of the body. He continued his occupation up to a week from his admission, when, in consequence of the pain (which from its first appearance had never entirely ceased) having much increased, together with greater embarrassment of the respiration, he was compelled to desist from work. He stated also, that he had latterly lost much flesh, and had been liable to profuse perspiration. No hereditary tendency to disease could be ascertained to exist. Upon admission he presented the following appearances and symptoms :—Stature moderate, face pallid, hair light, aspect indicative of distress ; a large cicatrix from a burn existed upon the left cheek ; the entire surface, together with the conjunctiva, exsanguine ; pulse 102, soft, small, and compressible. The appetite was good ; the tongue clean and moist ; his sleep was disturbed in consequence of not being able to lie down upon the right side ; the urine was small in quantity, high coloured, and not coagulable by heat ; the action of the bowels was natural.

Physical Signs.—The chest was well formed, but the left side was very imperfectly raised during inspiration. Upon the upper part of the chest upon both sides, and on the margin of both axillæ, the cutaneous veins were much enlarged ; branches of the left external mammary anastamosing freely and obviously with those of the right external epigastric. The veins of the neck were scarcely, if at all, enlarged ; but one or two very small round tumours, about the size of a pea, were to be felt just above the left clavicle, and immediately beneath the skin. Dulness upon percussion to a very marked degree existed in the entire left side of the chest both before and behind, and extended anteriorly across the entire breadth, and along the whole length of the sternum. The intercostal spaces were not altogether obliterated, when he did not breathe, and were more than ordinarily depressed during inspiration. *Tactile vibration*

was scarcely perceptible, and all trace of respiratory murmur was lost throughout the whole of the affected side ; while tubular breathing and shrill resonance of the voice, scarcely amounting, however, to ægophony, were audible in every part. The heart was displaced, but only slightly, considering the amount of dulness; if that dulness resulted from fluid effusion alone. The impulse of the heart was barely felt to the left of the sternum, and its sounds, apparently pure and normal, were most distinctly heard behind, or even on the right side of that bone. The right side was resonant as low as the sixth rib, but some dulness, slight, however, compared with that of the left side, existed below it anteriorly. Posteriorly the resonance was natural. Both before and behind puerile respiration was audible in the upper part, but in the infra-mammary, infra-scapular, and lower lateral regions, it was entirely obscured by a very loud and harsh pleuritic rubbing cry, exactly resembling the creaking of new leather. As a " placebo " until the case was further examined and considered, he was ordered Tinct. Columbæ, ʒj. in muriatic acid julep; but on August 13th, Liq. Potass., ʒj. in half a pint of porter thrice daily. August 17th.—Though it appeared more than probable that the original malady was a tumour of some kind pressing upon the veins entering the upper part of the chest, it was by no means unlikely that this might have produced passive effusion into the pleura, and that, in fact, hydrothorax, to a considerable degree, not merely existed, but materially contributed to increase the distress of the patient. After consultation, therefore, with my senior colleague, Dr Addison, it was resolved to explore the chest. An exploring needle was consequently introduced externally to the angles, between the ninth and tenth ribs; and the presence of an abundance of fluid having been ascertained, a small trochar was employed, and thirty ounces of perfectly clear serum withdrawn, to his very great relief, but with very little difference indeed in the physical signs afforded by auscultation and percussion. After the operation, performed without a single bubble of air getting into the chest, he had a comfortable night; and with the view of acting if possible upon the kidneys, he was ordered to take some squill and blue pill at bed-time, and Inf. Digitalis, ʒss. ; compound Sp. Juniperi, ʒj. ; Potass. Iodid. gr. iv. in mint julep three times a-day. The serum withdrawn remained clear, and afforded a mere cob-web trace of coagulum upon being examined the next day.

The medicine was continued for three weeks, without benefit, and upon September 11.—He was again so much distressed, as to require a repetition of the operation. The trochar was accordingly introduced by Mr Birkett, and forty-eight ounces of clear serum removed, which, upon standing, afforded a scarcely larger coagulum than that previously taken. Great relief again followed.

On the 13th.—He was ordered to continue the pills, and to use night and morning ʒj. of an ointment composed of equal parts of Ung. Hydrarg. fort., and Ung. Potass. Iodid., for the purpose of getting him fairly under the influence of mercury.

On the 17th.—He was fully under the influence of mercury. He was indeed rather profusely salivated, but without the slightest effect in checking the progress of the disease; as, upon the 23d, paracentesis was required and performed again, when sixty-four ounces of very slightly turbid serum, which afforded, upon standing, rather more fibrin, were withdrawn with the same manifest relief as on former occasions. Meanwhile, he did not lose much flesh, his appetite continued good, and he slept well. The mercury had been already omitted. A large blister was now applied to the side, and he was ordered a hydrogogue cathartic in the shape of compound jalap powder every morning. It may be interesting to observe, that whatever was the amount of fluid removed, and however great the relief afforded to the patient, there occurred no change in the extent or the character of the physical signs till a month after the last date. It may also be noticed, that in this case was first employed, under my own observation, the plan for preventing the admission of air into the pleura, originally, if I mistake not, proposed by M. Trousseau. It is simply a long sheath of soft linen, projecting two or three inches from the large circle or shield of

the canula, behind which it is secured. The linen soaked with the fluid hangs down over the opening, and allows the free escape of the fluid ; but, at the same time, by forming a valve which closes the opening, when, upon deep inspiration or after coughing, the external air tends to pass through the canula to fill up the space caused by the elevation of the ribs, it effectually prevents its admission. M. Trousseau, I believe, recommended that the valvular apparatus should be made of gold-beater's skin ; but a sheath of two or three folds of soft linen answers the purpose perfectly well. By the many who, as well as myself, think it desirable to exclude air from the pleura in " paracentesis-thoracis," I feel assured that this simple arrangement will be found very useful.

After the last date, he had several blisters, and took the salts of potass with nitric ether as diuretics, and also elaterium, with cream of tartar in small repeated doses during the day, but without obvious benefit. On October 5th he was tapped again, and seventy-five ounces of fluid were removed, containing more fibrin than even on the last occasion ; and on the 15th (only ten days after) he was again tapped, and sixty-four ounces of fluid were drawn off. It was now turbid, and deposited a considerable coagulum upon cooling. About this time the sides were measured, and the left found to be *two inches larger* than the right, a part of the effect being, without doubt, attributable to œdema of the integuments.

After the last tapping, a fresh combination of diuretics was prescribed, but without any evident effect on the amount of urine secreted ; but he appeared to derive benefit from the bitartrate of potass, given in two-drachm doses every morning, and also in solution, with six ounces of gin, as a common drink during the day.

Upon October 30, the poor fellow, however, said to me, to use his own expression, that he "was hard up," and requested to have the operation again performed. On this occasion, only ten ounces of sero-purulent fluid, mixed with many bubbles of air, could be withdrawn ; but the removal of even this small quantity afforded the patient some relief. In connection with the altered character of the fluid, it is worthy of notice, that he had for some days since the former operation complained a good deal of pain in the side, and that an erythematous blush had been observed around the puncture. This, however, was removed in twenty-four, or thirty-six hours, by the application of a cold poultice, as was the pain by the application of a blister.

On November 3, he was again much distressed, and was ordered to be dry-cupped on the chest, and between the shoulders, but without relief. The trochar was, therefore, again introduced; and, as it was thought probable that the diaphragm might, by adhesive contraction, be drawn up, and that some air might be evacuated by the change of position, the puncture was, by my recommendation, made by Mr Hilton, an inch and a-half higher in the side, but the trochar met a solid body, and no fluid or air escaped through the canula. A little emphysema of the integument followed the withdrawal of the instrument, indicating the probability, at least, of the lung having been wounded. The instrument was then introduced in the ordinary place, and many bubbles of air, with ℥x. of sero-purulent fluid evacuated, but with much less relief than ordinarily. The next day he was as much, or more, distressed than ever ; and, in the evening, I unwillingly prescribed, as an experiment, Tr.Opii. M. xx., Sp. Ætheris Sulph. c. M. xx., in camphor mixture, to be taken directly, and repeated in four hours, if it afforded relief. It acted " like a charm;" and the next morning the poor fellow was in ecstasies at its soothing effects. The draught was consequently repeated at night ; but the effect upon the patient was so beneficial (mechanical though evidently was the cause of his dyspnœa) that he intreated me to allow him to take it more frequently, and it was consequently ordered to be repeated three times a day, and the cream of tartar and *gin-imperial* to be continued as before. With these remedies he continued tolerably comfortable till November 15, when he was again much distressed, and a new symptom presented itself in the shape of a particularly harsh, loud,

and grating *rubbing sound*, heard on the right side of the sternum, but synchronous with the systole and diastole of the heart, and quite distinct from the equally harsh and loud pleuritic rub synchronous with the respiration, heard in the same situation as the former, as well as in the inferior part of the right side. It was deemed probable that the fresh sound might arise either from plastic deposit in the pericardium, or from the roughened state of the right pleura. For this a blister was ordered, and a drachm of compound jalap powder was prescribed. Paracentesis was again performed by Mr Birkett, and ten ounces of sero-purulent fluid, with many bubbles of air, were evacuated. He was certainly relieved. But œdema, which had previously existed in the legs, began now to make its appearance in the face and arms, and his general health began to wane considerably; though he still had no fever, and by the aid of the narcotic slept comfortably.

On the 23d, as he was much distressed, and the œdema was increasing, ten grains of compound elaterium powder were ordered, which acted advantageously, though the medicine depressed him considerably. The other medicines were continued as before.

On the 27th, he wished again to be tapped, and fifteen ounces of fluid—some of which was thick pus, and some almost clear serum—were removed with considerable, though only temporary, relief. The next day he was lying down flat in his bed, upon his left side, though with his face more swollen from œdema than at any previous time.

On the 29th, he was as well as usual, and was sitting up, at dinner-time, in his bed, and said cheerfully to the sister of the ward, that he did not want any meat for his dinner that day. Five minutes after, he fell back, and immediately expired.

Inspectio Cadaveris twenty-five hours after death.— The body generally, but particularly the head, face, and extremities, were swollen from œdema; and some enlarged veins were still observable about the upper part of the thorax, and the margins of the axillæ. The head was not opened. Chest.— The cartilages of the ribs were so firm and ossified, though the age of the subject was only thirty-one, that the use of the saw was required to separate them, by which the lung was unfortunately wounded just below the clavicle. Upon removal of the sternum, the heart was observed with the apex behind the sternum, and the base considerably to the right of that bone; and a large oblong mass, which subsequently proved to be the compressed left lung, was situated along its left margin. The pleura was yet unopened, but an accidental aperture now made gave exit to a stream of air, which escaped with a whizzing sound. The right pleura, first examined, was found sprinkled inferiorly with tufts of cellular membrane, presenting a very rough surface, and satisfactorily accounting for the persistent and harsh pleuritic rub heard in that situation. It contained, also, a few ounces of clear serum, but was not adherent at any part. The right lung was healthy, and quite free of tubercles. The pericardium was found universally adherent to the small feeble heart by a very thick deposit of firm lymph, which could without difficulty be peeled off in large masses, and divided into strips and layers. The left pleura was now opened, and found to contain about two pints of sero-purulent fluid, in a membrane lined by loose, soft, and irregular masses of unorganisable lymph, and almost divided into two cavities by a layer of the same material, extending across the inferior part of the cavity. The trachea was next divided, a blow-pipe introduced, and the lung inflated partially. The oblong mass close to the heart became slightly distended, and air escaped from the wound of the lung; but no other aperture could be discovered. The pleura was, therefore, filled with water, and the inflation renewed, but with no better success. The heart and lung were, therefore, removed *en masse*, but in doing this it was found that a firm thick lining of the pleura came out with them. This was so firm, thick, and strong, as to be easily separated from the pleura, and as, at first sight, to be mistaken for a huge cyst, which in many respects it greatly resembled. In many parts it was a quarter of an inch thick, and its cut surface presented in some parts

the greyish semi-translucent aspect, so constantly observed in hypertrophy of the pylorus. When removed, it bore no inexact resemblance, upon superficial notice, to a largely-distended stomach, for which, by a stranger, it was actually mistaken. The presumed origin of the malady was yet unseen. No tumour had yet been discovered. It is to be lamented, that the heart and great vessels, with the bronchial tubes, were not systematically examined and dissected, as, from a variety of cuts and incisions by different persons, it subsequently became next to impossible accurately to define and determine the relation of the different parts. It was, however, ascertained that a considerable mass of very firm and dense tissues, involving some of the large veins of the neck, was situated in the anterior part of the chest, before and on the left side of the trachea. It was so dense that the separation of the particular vessels obliterated, particularly after the unfortunate incisions, was deemed and proved to be impossible. Though of scirrhous hardness, it appeared to consist only of condensed and hypertrophied cellular tissue. Several bronchial glands, situated between the bronchi, were much enlarged, and connected together by condensed cellular membrane. Two or three of these, as large as pigeon's eggs, were situated upon, compressed, and considerably flattened the left bronchus, and a large branch of the left pulmonary vein. Several glands on the left side of the neck were also considerably enlarged. The abdomen was not particularly examined. The liver and kidneys were, however, found greatly congested, but otherwise healthy.

The case above briefly related, presents many features of interest, not merely in reference to its etiology or pathology, but also to its treatment and progress. Therapeutically, as well as diagnostically, it afforded some very useful information. The man, sober in his habits, and hard-working in his occupation of a coach-maker, appears to have been free from the symptoms of disease till about eight months before his admission to the hospital, or eleven before his death ; his first symptoms being a dull heavy pain at the epigastrium and left side, not increased by deep inspiration, but accompanied with cough. He continued his work, notwithstanding the persistence of these symptoms, till a week before admission, when the symptoms and general appearance of the chest were certainly more nearly those of some tumour pressing upon some of the large veins than of ordinary pleuritic effusion. The distension of the veins about the axillæ, and over the sternum, together with some œdema of the left arm, particularly supported this view of his disease, a view which was, "*pro tanto*," further confirmed by the persistent and harsh grating pleuritic rubbing on the right side, which it was thought not improbable might arise from malignant deposit upon the right serous membrane. It was, at the same time, observed, that the man, though pallid, had not the aspect of malignant disease, nor could any obviously malignant tumours be discovered in any part of his body. The useful exploring needle proved, however, the existence of fluid. But the fluid was so limpid, so almost entirely free from coagulum after resting for twenty-four hours, as still rather to confirm than oppose the notion of the existence of a tumour causing obstruction, and hence of hydrothorax, rather than of chronic pleurisy. The continued resistance of his complaint to all remedies, the steady persistence of the malady, notwithstanding the use of blisters, hydrogogues, diuretics, and the free and full action of mercury, all tended to the same conclusion ; and

though, after the successive tappings, the fluid evacuated became at first more and more fibrinous, subsequently sero-purulent, and at length almost pure pus, it was conceived that this alteration of the fluid might be very legitimately accounted for by the pleurisy excited by the repeated operation of paracentesis. It was, indeed, remarked, as before stated, that the change from simple turbid serum to sero-purulent fluid occurred, as it appeared, simultaneously with some severe pain in the side, and coincidently with an erythematous blush upon the skin.

As to the operations themselves, I have little to observe. With the exception of the simple valvular apparatus already noticed, they were performed in the way now for a long time practised in the hospital. Two or three circumstances may be, however, briefly noticed. It may be considered worthy of a passing observation to remark, that bubbles of air escaped from within the chest previously to any having been observed to have entered by the external wound. I believe, in fact, none ever did enter through the wound of the skin, except upon one occasion, when the valve was put aside for the purpose of ascertaining the cause of the fluid not escaping in a full stream. The occasion upon which air first escaped from the chest was the same in which the fluid first assumed the sero-purulent character, and which immediately followed the pain of the side, and the erythema of the skin. It may therefore be fairly presumed that ulceration of the pleura, and the escape of air into the cavity, had taken place between the two operations. Still, it may be worthy of remark, that no definite symptoms of the escape of air into the pleura were ever observed, nor did the patient ever exhibit the recognised physical signs of pneumo-thorax. In connection with the same facts, may be noticed the incapability of discovering the aperture in the pleura after death, even when the air was blown into the lung under water. This case, then, thus far supports the opinion of those pathologists who believe in the secretion of air by the serous membranes (if indeed any such now exist), seeing that the notion of the air having arisen from the decomposition of the fluid was plainly discountenanced by the fact of no such decomposition having existed, so far as the physical characters of the fluid could be received as indications of such a process having taken place. I believe, however, the facts are in truth fairly explicable by the supposition of the presumed aperture in the pleura having been minute and valvular,—by the fact of the lung having been wounded by the saw in opening the chest, which materially interfered with the inflation of the lung, and which—conjoined with the thick leather-like covering by which the lung was bound down, together with the compression of the left bronchus by enlarged bronchial glands, which obviously obstructed the fair introduction of the blow-pipe or hollow glass cylinder into that air passage—I believe did actually prevent the free and fair admission of air during the process of inflation of the lung, which, in truth, never was in reality inflated at all.

It was remarked, in relating the case, that upon one occasion the trochar was introduced higher up than in the former operations, and that no fluid then escaped through the canula, the extremity of which came in contact with an apparently solid body, and that, after the passage of a fine probe through the instrument, and the escape of a little air into the cellular membrane, the puncture was made in the ordinary place, and a little fluid and air withdrawn. But upon examination after death, it was clearly ascertained that this presumed solid body could not have been the lung or any tumour within the chest, neither of which could have been reached by the instruments from that situation, even if it had been desired or intended to have reached them. How, then, is the circumstance to be explained? I believe clearly in the following way :—In the *barren* operation, I think it probable that the trochar really never entered the pleura at all, but simply pushed the thick and tough membrane before it; that this membrane was itself the solid body felt and presumed to exist within the chest; that the fine probe penetrated this membrane, and gave rise to the slight escape of air which followed its withdrawal.

I now briefly notice the cause and progress of disease in this very unusual and highly interesting case.   In this respect a variety of opinions were expressed, and will probably be still maintained. I acknowledge, that from the period of the patient's admission, up to the examination of the body after death, I believed the complaint to have been essentially a tumour in the upper part of the chest, press- ing upon the large vessels, and thus giving rise to hydrothorax. Truth compels me considerably to modify this opinion. I must can- didly confess that I do not now consider that the case can be so ex- plained, although the confession necessarily implies some imper- fection in my diagnosis.

The membrane lining the pleura was so thick, so tough and re- gular, as at first sight to give the impression, and not unnaturally, of an adventitious cyst. I believe the correctness of that impression is now questioned by all its advocates, as it is assuredly resigned by myself. I believe all now suppose that this membrane was nothing more than the simple product of an old inflammatory affection of the pleura, or, in other words, a false membrane. It was certainly very old, and its contents, as at first withdrawn, resembled the fluid of hydrothorax much more than that of pleurisy. But the tumour of the mediastinum was also very old, and, as I believe, older yet than the pleurisy. The following, therefore, appears to me the most pro- bable explanation of the progress of the malady. From some undis- covered cause, inflammation of a slow and chronic character was excited in the cellular membrane and glands of the anterior medias- tinum; as a consequence, or extension of this, followed an equally chronic inflammation of both pleuræ; the serous effusion resulting from which was, on the left side, increased by obstruction in some of the branches of the brachio-cephalic vein, caused by the inflam- matory thickening of the anterior mediastinum, and also by pressure

upon some of the left pulmonary veins by the enlarged bronchial glands. This effusion existed in a healthy subject, and resulted, not in the formation of pus, but in the deposition of the whole of its fibrinous constituents; continual accessions were made, by successive inflammations of an equally chronic character, to the layer thus produced, which ultimately resulted in the dense membrane discovered after death, and in the fluid at first removed. The effusion had, I believe, at that time, become nearly or quite passive, and acted in the main mechanically, as would have done a solid tumour or a serous cyst. The repeated operations of paracentesis excited fresh inflammatory action in the false membrane; the consequences of which were the effusion of the soft albuminous material and flocculi discovered after death, and also the probable ulceration of the serous membrane covering the lung, whence resulted the escape of air into the pleura. The roughness of the right pleura was probably equally ancient with the false membrane of the left. The fibrinous deposit in the pericardium was evidently recent; and from the increased embarrassment resulting from this thick coating of lymph upon the already feeble heart, it is probable that the patient died. Upon the whole, this explanation appears more probable than that hydrothorax, in contra-distinction to pleurisy, existed upon the admission of the patient, and that the inflammation of the pleura was originally excited by the operation of paracentesis; as, I believe, that the dense and thick organised membrane had its origin before the first operation, and must have had more than a three months' growth. At the same time, I acknowledge, that I never recollect to have seen fluid so limpid as that first evacuated, withdrawn from a serous membrane which had been either acutely or long inflamed.

The dates of the various operations, and the qualities of fluid removed, were as follows:—

August	17th,............30	ounces	of	clear serum.
September	11th,............48	do.	...	do. do.
"	23d, ...64	do.	...	do. do.
October	5th,............75	do.	...	turbid serum.
"	15th,............64	do.	...	sero-purulent fluid.
"	30th,............10	do.	...	do. do. and air.
November	3d, ...10	do.	...	pus and air.
"	15th,............10	do.	...	do. do.
"	27th,............15	do.	...	clear serum and pus.

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The three following cases, though presenting nothing very remarkable, and though scarcely in accordance with the title of this communication, are introduced for the purpose of contrast with those which have preceded, and thereby adding, as it is hoped, to the practical value of the series.

CASE V.—*Pleurisy—Empyema—Paracentesis-Thoracis twice—Recovery.*

On May 26, 1848, 1 was requested to visit Matthew B——, aged nine years, by Mr Kesteven, of Holloway. I ascertained that the lad had been ill for

about three weeks, and had been attended by a surgeon and physician ; during a part of that time he had suffered from acute pleurisy and its consequences, and had been treated judiciously during their attendance, but that from causes into which it is not necessary now to enter, he had, so far as medical means are concerned, been almost neglected for the preceding ten days.   Upon Mr Kesteven's being summoned to see the boy, he immediately requested a consultation, and I was sent for.   I found the lad extremely emaciated, with a pulse from 140 to 180 in the minute ; respiring from sixty to eighty times in the minute, and looking distressed, anxious, and the very picture of sourness and misery.   He was lying, supported by pillows, upon his left side.   Upon baring the chest, the emaciation became more obvious ; the skin was dry and dark and shrivelled ; the left side was full, and the intercostal spaces prominent.   The ribs upon the left side were scarcely moved during inspiration ; the entire side was dull upon percussion ; the heart was removed to the right side of the sternum, where both the impulse and sounds were clearly discernible, while neither were distinguishable upon the left side. The respiratory murmur was inaudible, but tubular breathing and shrill resonance of the voice were clearly discerned upon the left side of the chest, and upon the right side the existence of puerile respiration was not to be mistaken.   At my suggestion, Mr Kesteven, having previously introduced an exploring needle, and having certified the presence of an abundance of purulent fluid, passed into the left side a small trochar, and drew off between three and four pints of pus, in a full stream, and without the admission of a single bubble of air.   A pledget of lint was applied, and a flannel bandage rolled round the chest, after which the poor lad expressed himself much relieved, and, more forcibly than if expressed by words, exhibited his relief by immediately lying down spontaneously upon his right side—a position which he had not occupied for weeks before. He was ordered to have good nourishment, and, I believe (for this relation is from memory alone, as unfortunately Mr K. has preserved but few notes of the case), a little grey powder, with compound ipecacuanha powder at bed-time, and some iodide of potassium, in bitter effusion, three times a-day.   I did not see the patient, nor even hear of him, till June 27, when I was again summoned to visit him, and found him improved in health, but with the chest much in the same condition as before.   The operation was again performed with similar results as before. An equal amount of fluid of similar character was withdrawn, and with equal relief, and very similar medicine was prescribed.   Seeing that the fluid was so decidedly purulent, and that the patient was so emaciated, it was considered that the lad might possibly have a better chance of recovery if a tube was left in the opening, so as to admit of the gradual exit of the fluid, and thereby prevent its large accumulation.   I have not seen the patient since the second operation, but I was informed by Mr Kesteven that upon his visiting him (July 3), with the view of carrying out the plan which had been agreed upon, he was greatly surprised, and at the same time much gratified, to find (to use his own words), " that the lung had so completely expanded as that good respiratory murmur was heard all over the chest, and the heart's sounds in their natural situation.   Since then, I believe, he has quite recovered ; but of this I am not sure, as, from causes unnecessary to mention, I gave up the case.   August 14, 1849."—He afterwards sent me the following note :—" Holloway, August 24, 1849.—My Dear Sir,—I have just met the boy B—— in the fields, running about as hearty and strong as any of his brothers.—Your's in haste. W. B. KESTEVEN."

This case appears forcibly to impress upon the mind the advantages which, under certain circumstances, may accrue from the operation of *paracentesis-thoracis*.   It must be recollected that this lad, when the operation was first performed, was much reduced, and exceedingly emaciated. The operation was proposed as a *dernier resort ;*

as it was felt that mere medicine would be of little or no service. It is true that the collection of matter might, and probably would, had the patient lived long enough, have made its way externally spontaneously, and it is possible that, after a long and tedious drain upon the system from the discharge of this huge thoracic abscess, which it literally became, the patient might have survived with a contracted chest and distorted spine. It may be, indeed, conceded, that the case was apparently a bad one for any mode of treatment, and that a very doubtful prognosis was delivered; and also that the rapidly beneficial change was unexpected; but it may be, at the same time maintained, that no other plan of treatment appeared likely to give the patient a fair chance of recovery, and also that no other plan of treatment would have effected such recovery in a mode equally " quick, safe, and pleasant." At the same time, it must be admitted, that we are not at the present time acquainted with the condition in which the chest actually now is, though, from the activity and apparent health of the patient, it may be, I think, fairly presumed, that nothing very serious now distresses him.

CASE VI.—*Phthisis—Pneumothorax—Pleuritic Effusion—Death in eleven days—No Inspection.*—(From notes by Mr Aldred.)

J. F., aged twenty-five, was admitted into spare ward, Guy's Hospital, under my care, November 28, 1849. He was an Irish labourer, of steady and temperate habits, and married. He had lost both father and mother, but at an advanced age; his brothers and sisters were believed to be healthy, and he had himself enjoyed good health up to three months ago, when he was attacked with severe hæmoptysis, for which he was treated by a medical practitioner, with the effect of soon stopping the bleeding. But about the same time he took cold from exposure to wet, and was troubled with cough for three weeks, together with pain in the left infra-mammary region, and febrile excitement. At the end of this period the symptoms increased in severity, and he suffered, in addition thereto, from the cough being accompanied with frothy mucous expectoration, and with dyspnœa, emaciation, nocturnal perspiration, and loss of appetite. Notwithstanding these symptoms, he continued in his employment till seven weeks ago, when he was compelled to desist, in consequence of the aggravation of his symptoms, local as well as constitutional. His progress was from bad to worse, until last Sunday (three days ago), when, after merely going out to get shaved, and retiring to bed, he was, in the act of coughing, attacked with exceedingly acute pain, extending transversely across the chest, together with urgent dyspnœa and orthopnœa. The two last symptoms had continued unabated up to the present time, but the pain had materially decreased in severity.

Physical Signs.—The left side was somewhat rounded, but imperfectly elevated upon inspiration; tympanitic resonance upon percussion existed in the whole side, both before and behind, and in the præcordial region, as well as in other parts. The heart was removed towards the right side, its sounds being barely perceptible on the left of the sternum, while both impulse and sounds were observable with sufficient distinctness upon the right, as well as behind the sternum. Upon auscultation, well-marked amphoric breathing, and metallic resonance of the voice and cough, were clearly distinguishable; and occasionally, but upon rare occasions only, a sound assimilating to, rather than being an example of, metallic tinkling, was to be recognised. The right side, so far as it was considered proper to examine the patient, presented nothing remarkable, excepting some puerile respiration. Such were the local signs presented

by this poor fellow, when, upon being removed to bed, I found him in the
erect position, with an anxious countenance, flushed face, perspiring skin,
pulse 110, small and feeble, and a tongue red at the edges and coated in the
centre. His urine was 1030, and loaded with lithates ; the alimentary func-
tions were performed with tolerable regularity. He was ordered to be kept
very quiet, to take half a grain of opium at bed-time, and of acid mixture
and decoction of bark, each six drachms three times a-day, and to have beef-tea
and arrow-root, or such other nourishment as he could take.

November 30.—There was no important change in his symptoms or the
physical signs, excepting that he complained of a dull heavy pain at the scrob.
cordis, and that there existed a little dulness at the base of the left pleura, in-
dicating the probability of fluid effusion, though it was not then in sufficient
quantity to produce the phenomena of succussion. Ordered a blister to the pit
of the stomach, and to continue as before.

December 1.—Succussion now audible ; progressing in other respects fa-
vourably. Pergat.

3.—Succussion more distinct, and appreciated easily by the uninitiated in
physical diagnosis, but not perceptible by the patient himself ; the metallic re-
sonance of the voice and cough were less distinct ; he complained of increased
weakness, and wished to have more to eat. This was ordered, together with
six ounces of wine. Medicines as before.

6.—He was found lying down flat in his bed upon the left side, and consi-
derably more depressed in power, but without any increased dyspnœa ; his
pulse was very feeble, and his spirits very dejected ; he slept indifferently at
night, but enjoyed his food and his wine ; the skin was bedewed with copious
perspiration. Ordered Julep. Ammoniæ c. Tr. Opii. M. xx., pro re nata. Wine
ten ounces, and pergat. He expired at four a.m. the next morning. No in-
spection of the body was permitted.

This poor man came under my notice as an out-patient, when,
seeing his distress, and struck with the relation of the history of his
symptoms, I was, from these circumstances, induced to believe that
he was suffering from pneumothorax. I had him put to bed, and
found that the physical signs confirmed the conclusion which had
been arrived at, from the history and the general symptoms of the
case. After hæmoptysis and cough of some weeks' duration, he was,
in the act of coughing, attacked with pain across the chest, violent
dyspnœa, and great general distress, all of which continued with
greater or less severity up to the time I saw him. One symptom,
the sensation of the escape of fluid into the pleura, stated by Louis
to be sometimes experienced by the patient himself, was, it is pro-
bable, alone absent. But this symptom former experience had
induced me to regard as of little moment, as, among the very many
cases of pneumothorax which have come under my observation, it has
assuredly very rarely occurred, and I believe that it has not been tes-
tified in a single instance. The patient's suffering from dyspnœa
was certainly considerable, but not nearly so great as I have often
observed in cases of pneumothorax. I was thence induced to believe
that the disease in the lung was considerable, or that pleuritic adhe-
sions were extensive ; as I have ever found that the distress arising
from pneumothorax, when occurring in the progress of phthisis, has
been inversely with the amount of disease previously existing in the
lung, or directly in proportion to the amount of healthy lung com-

pressed by the air which has escaped through the opening in the pleura,—a proposition which, I believe, was first made in a paper published in the " Medical Gazette " in the course of January 1844, by the author of the present communication.

One or two other circumstances demand a passing notice in the review of the preceding case. I need hardly say that I refer, in the first instance, to the singular fact of the patient suddenly assuming the recumbent position, and turning upon the left or diseased side. This change of position, it must be recollected, took place after the presence of fluid, as well as air, had been demonstrated by dulness upon percussion, increasing gradually from below upwards, and also by the very obvious phenomena of succussion. It is, therefore, probable that it arose from the increased pressure of the effused fluid upon the only working lung, and that the consequences of this increased pressure were diminished by the effect of the gravity of the effused fluid being relieved by the alteration of the position of the patient's body. The absence of *well-marked* metallic tinkling is, it is presumed, sufficiently explicable by the fluid in the pleura not rising sufficiently high to allow of the production, and consequent bursting, of bubbles of the air inhaled through the opening in the serous membrane. This patient never appeared to suffer from that amount of dyspnœa which indicated the probability of relief being afforded by the operation of paracentesis; or, though I should not have had the most remote hope of his ultimate recovery, I should not have hesitated to have ordered it to be performed for the mere purpose of temporary relief; so trifling is the pain, and, under proper precautions, so slight are the possible evils, which result from its performance. Such, at any rate, has been the result of an experience which, I think, cannot now be derived from less than a hundred examples, and is founded, I believe, upon a considerably larger number of cases in which the operation has been performed.

CASE VII.—*Subacute Pleuritic Effusion uncomplicated.*—(From the Notes of Mr Kingsford.)

C. C., aged 43, was admitted into Guy's Hospital, July 11, 1849. He was married, and by occupation a nursery gardener. He had enjoyed excellent health up to the period of the present attack, which supervened upon exposure to cold six weeks ago, when he was seized with violent pain in the left side, and lower part of the præcordial region, which compelled him to give up his employment. After two weeks' rest and "nursing," he resumed his occupation, although still suffering a little. A week afterwards, he had some bad news, which affected him much, and increased his complaint. From this time he had gradually got worse, so that he was at length compelled to seek admission into the hospital. At this time the pulse was full but quiet, the tongue clean, the appetite defective, the skin natural, the sleep undisturbed, and the respiration not materially increased in frequency, except upon exertion. The urine was healthy, and the bowels regular.

Physical Signs.—The chest was well formed, but the left side was imperfectly raised during inspiration, being moved as an inelastic case, rather than as a covering of separately resilient ribs. Dulness upon percussion extended downwards from the sixth rib anteriorly, and from below the angle of the scapula posteriorly. In the parts indicated there was a loss of the normal tac-

tile vibration, and an entire absence of the vesicular murmur ; the natural depression of the intercostal spaces was diminished ; and, while tubular breathing was observed anteriorly, ægophony was well marked posteriorly. The heart was slightly displaced, and an indistinct rubbing sound was audible about two inches below the nipple. Ordered App. C. C. lateri sinistro ad. ʒiv. ; St. Pil. Antimon. Opiat *c.* Hydrarg. Chlorid. gr. j.; 6ta. q. q. h. cum. haustu Julep, Ammoniæ Acetatis. Emplast. lyttæ lateri.

July 16.—The physical signs had diminished, the dulness upon percussion was less, and the vesicular murmur was now heard, though indistinctly, over parts of the side in which four days ago it was inaudible. His mouth was slightly affected by the mercury. Ordered Rep. Pil. q. q. nocte tantum. ℞ Potass. Iodid. gr. iss.; Liq. Potass. M. xv.; ex. Inf. Gentian c. ter die sumend.

July 19.—Salivation having been fully established, the pills had been omitted altogether. The physical signs were gradually disappearing. He required an occasional aperient, and complained of loss of appetite. Rep. Mist. *c.* Potass. Iodid. gr. iij. ; Potass Tartratis, ʒss. ; Sp. Juniperi, c. ʒj. Emplast. Cantharid. lateri sinistro. Porter a pint.

July 26.—The patient complained this day of a sharp local pain, upon taking a deep inspiration, a little below the left nipple, in which situation a distinct pleuritic rubbing was audible over a space about the size of the palm of the hand ; for which a small blister was ordered to be applied. In other respects he was making favourable progress, and all the physical signs, excepting the posterior dulness, had almost entirely disappeared. When he lay upon his face, the vesicular murmur was distinctly audible posteriorly, as low down as the ninth or tenth rib, although the dulness, even in that position, extended nearly as high as the scapula. Allowed middle diet, and to go on as before.

August 1.—He had improved in every respect. He now had no pain ; the dulness had decreased both in extent and degree, and the vesicular murmur was audible in every part, excepting at the very base of the lung posteriorly ; pleuritic rubbing was now pretty general over the lower part of the side; and, upon the inner side of the lower part of the scapula, well-marked ægophony was distinctly heard. Pergat.

August 6.—He had for some days been without complaint, either general or local ; and, though old pleuritic rubbing, and some dulness upon percussion, still remained, as he was anxious to return home, he was this day *presented* with many cautions as to exposure to cold or wet, and engaging too vigorously in labour.

The case thus briefly related presents nothing remarkable, and is introduced simply for the purpose of comparison and contrast with the preceding. Two circumstances alone may be worthy of notice. The first of these is the tardy disappearance of the dulness upon percussion, which, at least at the dependent part of the inflamed membrane, has been observed to continue long after every other physical sign and every constitutional symptom has ceased; so that it has been a frequent remark to the clinical pupils, that dulness upon percussion is the last physical sign (excepting some cases of persistent pleuritic rubbing) to disappear in pleurisy, and the first to disappear in pneumonia. The other circumstance to which reference was made as possibly worthy of notice is the persistence of ægophony, when all fluid, so far as the fact could be decided by other indications, had been already absorbed ; showing not only, as in numerous other cases had already been shown, that fluid sometimes exists in the pleura without ægophony, but also that ægophony sometimes exists without the presence of fluid.

ARTICLE II.—*Experimental Researches on the Nature of the Changes which may be induced by Operations on the Cartilages of the Lower Animals, in Illustration of the Process of* ANORMAL *Nutrition in such Textures.* By P. REDFERN, M.D., London, Lecturer on Anatomy and Physiology, and on Histology, at the University and King's College, Aberdeen.—(*Continued from* vol. ix., p. 1287.

OPPORTUNITIES for examining uncomplicated disease of the human articular cartilages in early life being so rare, that it is difficult for any one to obtain such a number as may enable him to determine with precision the nature of such changes, it becomes necessary to resort to the lower animals to ascertain whether similar affections occur in them ;—whether or not such lesions can be induced artificially, and if so, what is their real nature, progress, and mode of termination. In undertaking such a task, it is not to be forgotten, that facts can only be made apparent on certain conditions, viz. that each individual observation be made with the utmost care and faithfulness, and that the observations be sufficiently numerous. Bearing these things in mind, I commenced a series of experiments on the cartilages of the lower animals, in the early part of January 1849, immediately after my attention had been arrested by a remarkable case of disease, and before I knew anything of the real nature of many of the changes which I have since witnessed. These experiments were continued during the whole year, and were nearly ninety in number. The progress of each one was carefully watched and recorded from day to day ; and on the death of the animal, a lengthened microscopical examination of every texture, in the neighbourhood of the parts operated upon, was made, and the changes of structure were figured and described. The results of like operations were found precisely similar, in animals of the same species, in all cases in which some accidental occurrence had not taken place, such as the supervention of acute inflammation in the joints, pressure on the articular surfaces resulting from dislocations, &c. ; and consequently it is unnecessary to give in this place the whole particulars of each experiment.

The effects of the irritation produced in the *costal cartilages* of dogs, by the insertion of a *seton*, were ascertained and recorded in twenty-nine instances, in twenty-one of which the seton had been inserted a different number of days before death, the period of time varying from one to fifty-two days. In the remaining eight instances, the setons were inserted at four of the same periods before death as the others above-named. The setons consisted of strong silk, which was passed through the middle of each cartilage by a curved needle, the external surface having been previously laid bare by an incision through the skin and subjacent muscles. The ends of the silk were tied close upon the cartilage, to secure them from removal, and the external wound was carefully sewn up.

The wounds always healed by the first intention when not again interfered with ; a copious effusion of lymph took place under the skin, and was an inch in its thickness in places where more than one operation had been performed.   Absorption of the portion of cartilage included in the silk took place in three days, and solution of continuity in the whole cartilage in four days, the silk escaping by the wound when this did not heal immediately ; and, in other instances, it remained close to the divided cartilage, enclosed in a cyst of fibrous tissue containing a sero-purulent fluid.   On the fifth and sixth days, the ends of the cartilage at the seat of operation were found separated to the extent of one-eighth of an inch ; on the eighth and tenth days, they were a fourth of an inch apart; and after the twenty-eighth day, they were generally three-eighths of an inch distant from each other, though in two instances they were found much nearer.   The ends presented different appearances : in about half the instances, both were rounded or pointed; and in two cases the sternal end was concave, and the costal one convex ; and in the rest, one or both of the ends were flattened, concave, rounded, or pointed, these differences in no way corresponding to the length of time which had elapsed from the period of operation.   In every case, both ends were slightly reddened, and softer than natural ; they were connected behind by a portion of thickened perichondrium ; and, in some cases, by a half cylinder of that membrane, so that no doubt can exist that the space between the ends was the result of a removal of the texture of the cartilage, rather than of separation of the ends by mechanical means.   This interspace was occupied by a reddish-yellow, soft, and granular mass, which, on being examined at different periods up to the twenty-fourth day, was found to contain large numbers of spherical, finely-granular cells, $\frac{1}{3500}$th to $\frac{1}{2300}$th of an inch in diameter, leaving one bright nucleus, $\frac{1}{5000}$th of an inch in diameter, after the action of acetic acid.   The mass also contained primitive filaments (Bennett) with fusiform and exudation cells, the latter having but few granules in their interior.   It will be seen that these are the ordinary constituents of an inflammatory effusion in which cellular growths are taking place, and, as such, they are not to be confounded with the cells in the diseased ends of the cartilages and in their immediate neighbourhood, which will be afterwards described.

It has been already noticed that the portion of perichondrium connecting the ends of each cartilage divided by disease was considerably thickened.   The thickening was believed to exist even on the first and second days after the passage of the silk, and it was quite obvious on the third day, the membrane afterwards becoming four or five times its usual thickness.   The extent of the thickened part was from one-fourth to half an inch along both ends of the cartilage, but beyond this, the perichondrium retained its healthy characters. In every case, the first changes which took place in the structure of the cartilage were those in its perichondrial layers, and the extent of these changes was invariably limited to the part covered by thick-

ened perichondrium, the actual amount of change of structure in the cartilage being always in a direct ratio with that of the thickening of the membrane just named.

That the changes of structure of any part may be properly appreciated at their very commencement, it is essential that every appearance and character of the healthy texture be thoroughly known ; and, indeed, without such an acquaintance with a particular texture on the part of others, it is almost impossible to convey to them any idea of its morbid anatomy and pathology. There can be no question that the only certain method of recognising slight disease in any texture, is to compare it with a portion of healthy tissue removed from the same individual under precisely similar circumstances; and therefore Fig. XLIII., which represents healthy tissue, has been inserted, that the characters of the diseased textures may be more readily understood.

The section which the figure just named represents, was removed vertically from the costal cartilage of the dog in the direction of its length, the upper part of the figure showing the structure of the perichondrium and of the perichondrial layers of the cartilage. The perichondrium consists of a dense mass of fibres, which run in the direction of the cartilage for the most part, and present the characters of ordinary fibrous tissues, the greater number of the fibres being those of white fibrous tissue, which are at once rendered transparent, and then destroyed, by the action of acetic acid, and the remainder consisting of nucleolar or elastic fibres lying amongst the former, and not in any way changed by the acid. The nucleolar fibres are found interspersed irregularly amongst those of the white fibrous tissue, their arrangement being precisely that which is noticed in other fibrous membranes. On examining the deepest part of the perichondrium, in section with the cartilage, no line of demarcation can be seen between them, for amongst the fibres of the perichondrium a few of the cells of the superficial layers of the cartilage can be seen ; whilst, deeper than this, is a mass of cells which are separated from each other mainly by hyaline substance containing a few fibres. The action of acetic acid on such parts neither affects the cells of the cartilage, which are here very much elongated, and scarcely to be distinguished from fibres, nor the nuclear fibres of the perichondrium, as has been before stated. It becomes a question, therefore, whether there be any real perichondrial membrane perfectly distinct from the transformed superficial layers of the cartilage ? or whether, as there is a great difference in the external part of the perichondrium and the deepest perichondrial layers of the cartilage, the former texture derives its origin from the latter by nutritive changes which affect the cartilage during the whole of life ? The solution of this question is of the utmost importance in physiology and pathology, as it affects the general inquiry, whether textures are as distinct from each other as they are usually considered ? and whether any one texture is capable of being absolutely transformed into another, which has

hitherto been considered perfectly distinct. If, however, it can be shown that the structure of articular cartilages, in which Henle states that he has never been able to find a fibre, is readily convertible into fibrous tissue ; and if articular cartilages, generally believed by physiologists to be incapable of ossification, can be demonstrated in different stages of calcification through their entire thickness, a great part of the difficulty in believing in the possibility of conversion of cellular cartilage into fibrous perichondrium will be removed. The transformation of articular cartilages into fibrous membrane in the human subject has been already shown in the last volume of this Journal, and the strongest confirmation of the statements previously made on this head will now be given, in the fact, that whenever the cartilages, articular or otherwise, of animals are subjected to considerable injury, the process of conversion of the adjacent uninjured cartilage into fibrous texture commences instantly to heal up the breach. Moreover, the connection of the superficial layers of the cartilage with the formation of the perichondrial fibrous tissue, is much more evidently shown in disease when the texture of the cartilage becomes opened out, and the relation of its elements to the fibres of the perichondrium can be more satisfactorily examined.

The characters of the healthy costal cartilage of the dog are as follows :—Immediately under the perichondrium it consists of numbers of elongated cells, which lie so closely applied to each other, that the whole texture appears to be made up of them, or a few fibres may be seen in some places between the cells ; a little deeper, similar cells, a little greater in width, lie, further separated from each other in a hyaline substance ; whilst still deeper in the cartilage, the cells are yet further separated, much larger, rounded, and arranged in groups imbedded in hyaline substance. The average size of the superficial cells is $\frac{1}{1400}$th of an inch long, by $\frac{1}{7000}$th or $\frac{1}{5000}$th broad, and some of them contain a small nucleus or a few indistinct granules, whilst in many, neither nucleus nor granules can be perceived —(Fig. XLIII.) The cells in the deeper parts are very large, always containing a distinct nucleus, and occasionally a nucleolus. They are of various sizes, the largest being in the deepest parts, and very generally changed by the occurrence of ossification in the centre of the cartilage, even in very young animals.

On the third day after the passage of a seton through the cartilage, the portion which had been included in the silk had disappeared, and the exposed surface was rough and soft. The perichondrium in the immediate neighbourhood was evidently thickened, and the superficial cells of the cartilage were increased in width, separated from each other, and each contained from three or five to twelve or sixteen highly refracting granules, $\frac{1}{5000}$th of an inch in diameter. In some places the walls of the cells were not visible, and patches of granules indicated their former existence ; in others, patches of granules, which could not at first be seen, were shown to exist after the

granular mass had been rendered transparent by acetic acid. The walls of the deeper cells, on the surface of absorption, were indistinct, their nuclei were dividing into a series of large bright granules, which filled up the clear space that formerly existed between the nucleus and cell-wall; and some cells were seen to have discharged their contents into a granular mass which lay on the surface.

On the fourth, fifth, and sixth days, the changes above named were all better marked. The superficial cells on the fifth day are shown in Fig. XLIV. They measured $\frac{1}{1400}$th of an inch by $\frac{1}{2000}$th, though, at a very slight distance in the same cartilage, the width of the superficial cells was not greater than $\frac{1}{7000}$th of an inch. On the ends of the cartilage, after six days, there was a fibro-granular mass, in which the discharged corpuscles of the cartilage cells were distinctly seen after the addition of acetic acid. These bodies could also be separated from the end of the cartilage by pressure, for their connecting hyaline substance was very soft, and allowed the corpuscles to be pressed from it and examined loose on the field of the microscope. No action was exerted on them by acetic acid.
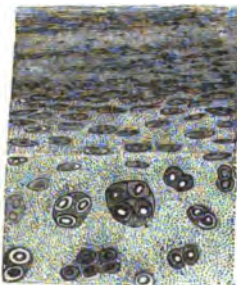
Fig. XLIII.   Fig. XLIV.
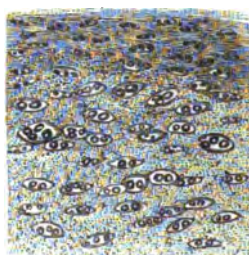
Fig. XLIII.—*Section showing the perichondrial layer of cells in the healthy costal cartilage of the dog.*
Fig. XLIV.—*Perichondrial layer of cells of the costal cartilage of the same dog, changed by the insertion of a seton five days before death.*

The further changes in the structure of the ends of the cartilages were so similar when examined at numerous periods up to the fifty-second day, that they may be described by reference to a few observations.

On the fortieth day, a dense fibrous mass, on the thoracic surface of the ends of the cartilage, constituted the walls of a cyst, which contained the silk with the knots upon it perfectly entire. Complete solution of continuity of the cartilage had taken place, and its softened ends were separated to much less than the usual distance, the interspace being occupied by a fibrous mass. A portion of perichondrium connected the ends, and this membrane was three times its usual thickness for one-fourth of an inch in extent upon both. No change in the structure of the cartilage could be seen beyond the distance of half-an-inch from the solution of continuity. At that point, the thickening of the perichondrium commenced, and the cells

under it were considerably increased in width, and apparently shrivelled or irregular on their surface. Further on, the changes were much more marked, the cells measuring $\frac{1}{2000}$th of an inch in width, and having a swollen appearance. Many had a perfectly smooth surface, and no appearance of granules or a nucleus in their interior; others were wrinkled or contained numerous granules. In the deeper parts of the superficial layers of the cartilage, the cells lay in a perfectly hyaline substance; but those near the perichondrium had indistinct fibres amongst them, and, in fact, gradually mixed with the perichondral fibres until they could no longer be recognised. The deeper cells had indistinct walls near the end of the cartilage; and in the place of nuclei of the ordinary kind, they contained numerous bodies much smaller than nuclei, and refracting the light as highly as oil. A little further on, these were discharged from the cells into softened hyaline substance, and irregularly disseminated through it, measuring from $\frac{1}{1400}$th to $\frac{1}{3500}$th of an inch in their greater diameter. They were round, oblong, triangular, or considerably elongated; in some places, apparently shrivelled; and in others, they contained small but very evident granules. At the point where the large cells discharged their corpuscles into the hyaline mass, their walls constituted a notched line in the tissue, the notches being filled by the hyaline and corpuscular mass—(Fig. XLV.) A little beyond the line just named, as well as in the perichondrial layers close to the surface of absorption, the hyaline substance became less transparent, fibres began to appear between the corpuscles, and the latter were less distinctly seen—(Fig. XLVI.) Then many of the corpuscles became very much elongated, and lay amongst a mass of fibres, whilst others, which remained rounded and of very small size, gradually disappeared amongst similar fibres.

Fig. XLV.
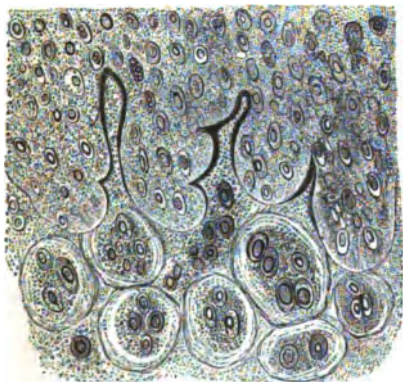
Fig. XLVI.
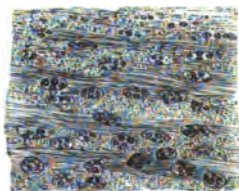
Fig. XLV.—*Section of the costal cartilage of the dog, showing the discharge of the corpuscles of the cells, resulting from the passage of a seton thirty-four days before death.*
Fig. XLVI.—*Section showing the first appearance of fibres in the hyaline substance between the changed and granular cells of the perichondrial layers of the costal cartilage of the dog, after the passage of a seton forty days before death.*

The structure of the mass between the ends of the cartilage was very similar to the textures just named. It consisted, near the cartilage, of hyaline substance, containing a mass of corpuscles disseminated in it ; and, at a little distance, of a fibrous mass, containing similar corpuscles, elongating so as very evidently to constitute the nuclear fibres of the fully-formed fibrous tissue. Every stage of the formation of these fibres from the corpuscles was examined in one or other of the cartilages operated on ; for, even when the corpuscles seemed to have wholly disappeared amongst the fibres, they could be brought into view by the action of acetic acid, and then appeared as represented in Fig. XLVII., or much more elongated, and constituting fibres. Reference to the formation of fibrous tissue from the substance of human articular cartilages, shows the process to be precisely similar in them. See Figs. XXI., XXII., and XXIII., also Figs. XXXVI., XXXVII., and XXXVIII., in the last volume of this Journal. And again, a similar but less evident change appears to take place in the healthy state of the superficial layers of the costal cartilages, at their junction with the perichondrium.

In one case, thirty-two days after the insertion of the silk, a tumour was found upon the posterior and upper part of the cartilage, and projected from it an eighth of an inch. It cut like cartilage or enchondroma, and appeared to the naked eye like cartilage with which bands of fibre were intermixed, being also covered externally by a sort of capsule of fibrous tissue. Thin sections were translucent, and consisted of fibres which were far apart, and enclosed amongst them a mass of elongated triangular or irregular corpuscles or cells, which were finely granular or nucleated. The corpuscles measured, on an average, $\frac{1}{1400}$th by $\frac{1}{2000}$th of an inch in diameter. Besides the cells and fibres, there existed an evident matrix, composed of hyaline substance—(Fig. XLVIII.)

Fig. XLVIII.
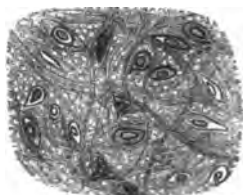
Fig. XLVII.

Fig. XLVII.—The appearance of the fibro-nucleated mass, after the action of acetic acid.
Fig. XLVIII.—Section of a tumour formed upon the costal cartilage of the dog, and resulting from the passage of a seton thirty-two days before death.

In another instance, forty-four days after the insertion of the silk, a quantity of calcareous matter was found amongst the fibrous tissue between the ends of the cartilage, and was composed in some parts of open spaces, surrounded by calcareous, branching arms, as in the cancellated texture of bone. Distinct osseous lacunæ, and discharged

corpuscles of cartilage cells, were likewise found in different places; and, on tracing them towards each other, the lacunæ were seen to be formed by the calcification of the walls of cartilage cells, as distinctly as the spaces in the interior of the cells, constituting the hard parts of vegetables, can be traced in their formation from secondary deposits.

The *ensiform cartilage* took on precisely the same changes as the costal, in an instance in which a seton was passed through it, in the dog, forty-four days before death.

The results of the passage of a seton, in four instances, through the *cartilage of the nasal septum*, were also almost precisely similar to those following the same operation on costal cartilages. On the first and second days afterwards, no change could be seen in rabbits. After seven days, in the dog, the perichondrium near the opening was slightly thickened, and the cells under it were larger and rounder than natural. On the edges of the opening, the deeper cells were also decidedly changed in their characters and arrangement. They formed less distinct groups than those at a little distance, being more regularly disseminated through the texture; they appeared shrivelled, and contained bright granules, like globules of oil, $\frac{1}{5000}$th of an inch in diameter. A granular and indistinctly fibrous mass was found on the edge of the opening, lying in contact with hyaline substance, which was softened, and in many places fibrillated, or even fibrous, where it joined with the granular mass. The splitting of the hyaline substance was much more distinct after forty-four days, in another instance, also in the dog. In this case, it took place at a well-marked line, and the corpuscles, set free from cells at a little distance, were mixed with the fibres, and became gradually lost amongst them. The cartilage cells, at $\frac{1}{50}$th of an inch distant from the point of splitting of the hyaline substance, contained distinct granules, and each appeared to have appropriated a portion of the surrounding hyaline substance to itself, so that the whole appeared converted into a perfectly cellular mass. The largest cells measured $\frac{1}{470}$th of an inch in their long diameter; and their corpuscles, when set free, varied in length from $\frac{1}{2300}$th to $\frac{1}{1500}$th of an inch, and in breadth from $\frac{1}{3300}$th to $\frac{1}{2300}$th of an inch.

No change could be seen on the first and second days, after setons had been passed through the *cartilages of the ear* in rabbits; but on the forty-fourth day after one had been passed in the dog, a calcareous mass, full of osseous lacunæ, was found on the edge of the opening, where, also, the proper texture of the fibro-cartilage gave place to fibrous tissue, though no change could be seen to have taken place in the cells.

Division was practised on the costal cartilages of the dog in six instances, and the parts were examined in three cases, after six days; in two, after fifty-two days; and in the other, after fifty-six days. *After six days*, slight swelling was found at the point of division and for a sixth of an inch on either side, and was produced by soft,

reddish lymph, which also extended into the fissure produced by the division, and was full of fusiform cells. The perichondrium was thickened, for a little distance from the point of division, in every instance, and the superficial cells were rounded and granular, as they were after the passage of the setons. No change could be seen in the deep cells at this period. *After fifty-two and fifty-six days,* the sternal end was found above the costal, overlaying it to the extent of one-fourth or three-eighths of an inch; and both ends were slightly reddened and soft. The perichondrium was thickened near the ends, and the cells below it were rounded and granular as usual. At this period, the deep cells were bursting and discharging their corpuscles into the hyaline substance, or upon the cut surface; the corpuscles, in the latter case, becoming much elongated, and mixed with a fibro-granular mass.

Ligatures were tightly applied to the costal cartilages in twelve instances in rabbits, and in five others in dogs, at periods varying from one to forty-eight days before the parts were examined.

On the first and second days, no change could be seen in rabbits, except that a small portion of cartilage appeared deficient under the ligature; but in the dog, two days after the application of a ligature, considerable destruction of the cartilage was found to have taken place for $\frac{1}{12}$th of an inch in the direction of its length, whilst the ligature remained and enclosed a thin lamina of cartilage. The surrounding soft tissues were detached from the cartilage, having been separated by inflammatory effusion. The thin portion of cartilage remaining in the ligature consisted of cells, which contained a number of small nuclei, apparently formed by irregular division of the ordinary ones; the surface of the same part presented a number of hyaline bands, $\frac{1}{250}$th of an inch long, and precisely similar to those before described in the chronic disease of human articular cartilages. The perichondrial cells were changed in a very marked degree. They were broader than healthy cells, swollen, and contained from two to six or eight very bright granules; being also so much rounded and separated from each other as to require tracing up to the perichondrium to be recognised.—(Fig. XLIX.)

Fig. XLIX.
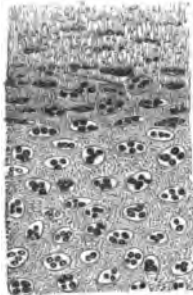
Fig. XLIX.— Changes induced in the perichondrial cells of the costal cartilage of the dog in two days, by the application of a ligature.

In the dog, *on the fourth day,* complete solution of continuity of the cartilage had taken place, and yet its central part was ossified. At one part, the perichondrium was evidently thickened, and the superficial cells were enlarged, granular, and irregularly distributed in the texture; where the perichondrium was not obviously thickened, the superficial cells were unchanged. When examined after a ligature had been applied thirty-nine days, the costal end of the divided cartilage was found lower than the sternal one, and overlaid

by it for an extent of $\frac{1}{8}$th of an inch. The ends were rounded and slightly softened, and the cells near to them were breaking up, and, in a few places, crowded with corpuscles, which, at a very definite line further on, were free in the hyaline substance. These corpuscles, when of the largest size, measured $\frac{1}{2300}$th of an inch—the greater number being much smaller. Further on, they were either much elongated, or reduced to mere rows of granules, and mixed with fibrous tissue, apparently formed by splitting of the hyaline substance of the cartilage. The perichondrium was only slightly thickened; but near the free ends of the cartilage, its superficial cells were considerably enlarged, granular, and separated from each other, the most external mixing with the fibres of the perichondrium, as if they were to constitute the nuclear fibres of that membrane when fully developed.

In a number of instances in which *ligatures* had been applied *for thirty-three days, or longer*, to the costal cartilages of rabbits which were ossified in the centre, complete solution of continuity had taken place; the ligature remained on one end of the cartilage, and, together with both ends, was enclosed in a yellowish-white curdy mass, constituting tumours from the size of a horse-bean to that of a small walnut, consisting of irregularly-rounded granular cells, which varied in size from $\frac{1}{3500}$th to $\frac{1}{2300}$th of an inch, becoming shrivelled, and then displaying a large nucleus, or two or three granules, on the action of acetic acid. Destruction of the cartilage, which covered the central ossified part of each, had taken place on both ends to the extent of $\frac{1}{8}$th of an inch; and on the surface of absorption, the cells had broken up and discharged their corpuscles into the hyaline substance, which, in some places, could be seen becoming fibrous at the same time as the corpuscles were elongating. In a few places, the fibrous mass was so fully formed as to prevent the corpuscles from being seen until after the action of acetic acid, which at once revealed their existence. The calcified part of each cartilage included in the ligature, presented a number of cells, in the walls of which calcareous matter had become deposited, giving to the texture an appearance very different from that of the part further on, in which spiculæ of bone were seen in their usual arrangement.

The results of operations on the *cartilages* of fourteen *of the largest joints* of dogs and rabbits show how little such textures are disposed to take on diseased actions;—that when disease is excited in them, it has no tendency to involve more of the cartilage than that which is immediately in the neighbourhood of the injured part, nor yet to extend to the other textures of the joint; and again, that whether the cartilage be injured by the knife, by actual cautery, or by the application of strong acids or alkalies, anormal nutritive changes are excited in the surrounding parts, so that they soon give rise to fibrous texture, which heals up the breach.

I have found that simple exposure of the interior of the largest joints of the lower animals, for a limited time, is unattended with the

production of disease; and, indeed, it would appear that in man, the danger resulting from simple exposure of serous and synovial membranes by incised wounds, with clean instruments, has been very much over-rated. In dogs and rabbits, simple incisions in the articular cartilages, and even the application of actual cautery to them, excited, in many cases, no inflammatory action whatever, or merely slight swelling of the joint for a few days; unless when a dislocation, as of the patella, was the result, or when both knee-joints of the same animal had been operated on at the same time. The lameness produced by such operations, especially in young animals, disappeared in a week or fortnight; but, when dislocation resulted, more serious disease in the joint invariably occurred. The action of chemical substances could not be strictly limited to the cartilages, and acute inflammation, with copious effusions of lymph, took place in the interior of the joints to which they were applied.

The effects of *incision* of the *articular cartilages* of dogs were ascertained in eleven instances in which the process was not interfered with by any accidental occurrence. The incisions were made in the cartilage of the patella, and were directed obliquely from below upwards, so as to produce small wedge-shaped flaps, which were left attached by their bases. No change of structure was visible in three cases examined on the seventh day after operation. The rest were examined at different periods between the thirty-seventh and the forty-ninth day after the incisions had been made, and all presented precisely similar changes of structure, further advanced on the forty-ninth day than at periods before that time. In no case could any change be observed by the naked eye; for the position of each incision was merely indicated by the slightest transverse and curvi-linear depression where it had been made. At the thirty-seventh day, the surface of the cartilage was perfectly even, and the flaps were so firmly adherent to the cut surface below them, that sections were made with the greatest ease through the adjacent cut surfaces, and preparations were preserved with these surfaces still attached. The changes of structure were most marked at the free edges of the flaps, and on the cut surfaces, also for a slight distance in the superficial cells. On examining vertical sections through the flaps and cut surfaces, the cells at the base of the flaps were found arranged precisely as in healthy cartilages, the deep ones measuring $\frac{1}{2350}$th to $\frac{1}{3500}$th of an inch, accumulated in vertical groups of three or four—the group measuring $\frac{1}{760}$th of an inch by $\frac{1}{2300}$th. Passing onwards towards the free edge of each flap, the deep cells became granular, apparently from division of their nuclei into granules; and, in some cases, a similar change could be seen in the superficial cells of the flap. On the cut surfaces, and at the free edge of each flap, the cells were very large, round, or oblong in shape, and they measured from $\frac{1}{1400}$th to $\frac{1}{330}$th of an inch in their greater diameter, and from $\frac{1}{1400}$th to $\frac{1}{540}$th in the lesser. The greater number were oblong, but many were spherical, and all were crowded with irregular corpuscles, measuring from $\frac{1}{3500}$th to $\frac{1}{2000}$th

of an inch. The inter-cellular substance was hyaline, and in a few places indistinctly fibrous. The cells were irregularly arranged in it, and thus contrasted remarkably with the vertical groups in the deep cells of healthy parts. Many of the large round cells, on the cut surfaces, projected considerably, and they no doubt discharged their corpuscles into the fibro-nucleated mass connecting the surfaces; for, on examination, the mass was found to be very transparent, occasionally containing imperfect fibres, and always studded with irregular corpuscles, differing from those within the cells, in being smaller and more irregular. The changes observed in the superficial layers of the cartilage were,—slight enlargement of the cells, especially in width, with the production of granules in their interior, the inter-cellular substance becoming indistinctly fibrous or granular, so as partly to conceal the cells.—(Fig. L.)

Fig. L.
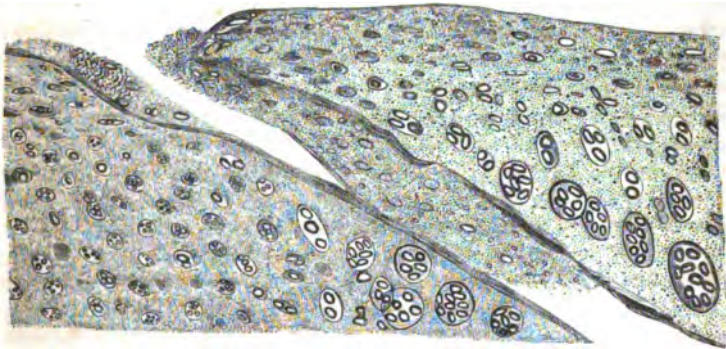
Fig. L.—*Appearance of the cartilage of the patella of the dog on the edges of an incision, made forty-nine days before death.*

In an instance in which the patella was dislocated outwards, and had the middle of its posterior surface firmly pressed upon the edge of the articular surface of the condyle of the femur during flexion, a small flap, made by incision, was found directed upwards, and lay in such a position as to make pressure upon another flap, situated higher up, causing its entire removal. The structure of the flap which was turned up was changed in a similar way to that of those before described. The whole upper part of the cartilage was loosened at its attachment to the bone. Its cells were indistinct in some parts, having become very granular, or reduced to mere patches of granules, which lay in a fibrous or hyaline matrix, the hyaline substance having become converted into fibres, whilst the cells were reduced to small patches of granules.

In another instance, the patella was dislocated internally, and the external half of its articular surface, which moved on the condyle during flexion and extension, presented a perfectly smooth and po-

lished surface on a level with the other parts of the cartilage. This surface rung like bone on being struck with a knife; but, on being examined, still presented the usual arrangement of superficial and deep cells of cartilage, in a few places; whilst, in others, the cells of the whole thickness of the cartilage were distinctly calcified, explaining why this part of the surface was not depressed, as it would have been if the cartilage had been removed so as to have exposed the bone. The deep cells still retained their columnar arrangement even when completely calcified. On the surface of the uncalcified parts of the cartilage, large rounded cells existed, measuring in some places, $\frac{1}{470}$th of an inch, and crowded with finely granular corpuscles. A similar calcification of the cells of the cartilage of the patella of the rabbit was noticed, after incision and inflammation of the joint resulting from this and the application of actual cautery to the cartilage of the femur. As the cartilage became calcified, the texture assumed the appearance of some forms of fibro-cartilage, with very indistinct fibres.

The changes produced by the application of *actual cautery* to a limited space on the cartilage of the femur or patella, so as to destroy it through nearly its whole thickness, were ascertained in dogs and rabbits in ten instances. It was found that inflammation by no means necessarily took place when the cauterised spot did not exceed one-eighth of an inch in its greatest diameter, and when dislocation did not result; but that when the application was made to a more extensive surface, even superficially, a considerable quantity of lymph was thrown out by inflammation, and was mixed with the elements of the diseased cartilages. The cases in which neither inflammation nor displacement occurred, were those in which the changes in the texture of the cartilage were best observed, though these were essentially similar, in all the cases, in animals of the same species.

No change of texture could be distinctly seen on the most careful examination made on the 2nd and 7th days after the application of the cautery; but a marked change was found at periods between the 37th and 98th days, and was always of the same character. Thus, *on the 39th and 49th days*, the cartilage presented a reddened and depressed spot at the point of application of the cautery; and, for the distance of a line around that part, it was slightly diminished in its thickness. Beyond this, every part of the texture appeared perfectly healthy, and consisted of a series of superficial cells, parallel to the surface, measuring $\frac{1}{1700}$th of an inch by $\frac{1}{7000}$th, and rarely containing a distinct nucleus or granule;—also of deep cells, arranged in vertical groups, as usual, these groups measuring $\frac{1}{700}$th by $\frac{1}{2300}$th of an inch, and lying in hyaline substance, like the cells of the surface. On proceeding in the examination, from the healthy towards the cauterised part, the deep cells were further separated, and constituted rounded groups rather than vertical columns; nearer still, the cells in the rounded groups became separated, enlarged, and re-

gularly disseminated through the hyaline matrix; whilst, where the cartilage was diminished in thickness, the superficial cells were no longer seen, and the deeper ones were very much enlarged, rounded, or oblong, and crowded with corpuscles. The largest measured $\frac{1}{230}$th by $\frac{1}{250}$th of an inch, and the average size of their contained corpuscles was $\frac{1}{3500}$th of an inch. The cells of largest size were found at an abrupt line, which constituted the margin of the surface to which the cautery had been applied; those seen on passing away from this point gradually diminishing in size—(Fig. LI). Beyond the largest cells, in the other direction, was a mass of corpuscles lying in a hyaline matrix, which, at a little distance, presented traces of fibres; whilst perfect fibres, densely interwoven, constituted a fibrous membrane at the bottom of the cauterised spot. In the fibrous membrane, no further traces of corpuscles could be seen than small patches of granules; and, in many preparations, these were not visible without the action of acetic acid. Between the part consisting of perfect fibres, and that composed of corpuscles discharged into a hyaline matrix, the corpuscles were found gradually becoming smaller and elongated, like nuclei of fibres; or granular, shrivelled, and at last reduced to mere clusters of granules. The texture of the bone under the cartilage thus changed, was dense and apparently healthy.
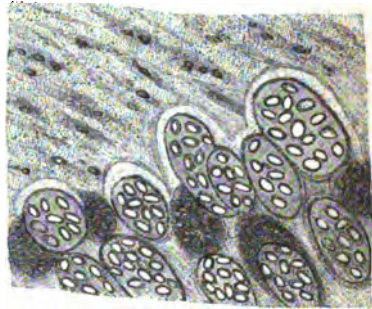
Fig. LI.

Fig. LI.—*Shows the cartilage of the femoral trochlear on the edne of a spot to which actual cautery was applied forty-nine days before death.*

In cases where inflammation had taken place, the cauterised and the neighbouring parts were covered with a dense fibrous mass, which could be stripped from the bone with forceps. The structure of the superficial and deep portions of this mass was very different, the superficial part consisting of fibrous tissue, with nuclei, elongated in the direction of the fibres, and brought into view by the addition of acetic acid; and the deeper ones having nuclei interspersed amongst fibres, and lying at right angles, or obliquely, in relation to each other, capable also of being traced in all stages of their formation, from the discharged corpuscles of cartilage cells.[1]

In a knee-joint, in which internal dislocation of the patella became permanent, a dimple-like depression on the external part of the car-

[1] It is difficult to convey an accurate idea of the difference in appearance of the fibres and nuclei of the fibrous tissue, which was the product of inflammation, and of that which resulted from changes in the texture of the cartilage, notwithstanding that a few examinations of both, with the attention directed to the nuclei, readily serves to distinguish them.

tilage of the inner glenoid cavity of the tibia, indicated the point on which the condyle of the femur had rested. The superficial cells of this part were spherical, $\frac{1}{1200}$th of an inch in diameter, and contained three or four finely granular corpuscles, whilst the superficial cells of all the surrounding parts presented the usual horizontal arrangement.—(Fig. LII.)

Fig. LII.
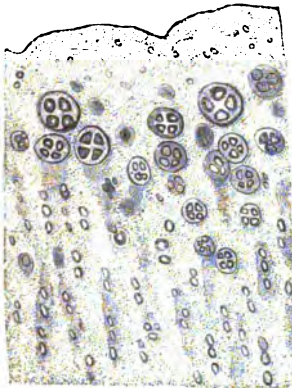
Fig. LII.—*Cartilage of the internal glenoid cavity of the tibia, at a dimple-like depression, on which the condyle of the femur rested, showing the large cells on the free surface.*

In another case, the patella remained dislocated internally, and the cartilage of both glenoid cavities was considerably changed, without any other apparent cause than the unequal pressure made upon the surfaces. The cartilage of the external cavity was softened; its superficial parts were granular, and their cells largely developed and loosened, as shown in Figs. XI. and XII. These cells measured $\frac{1}{1000}$th by $\frac{1}{1700}$th of an inch, and contained imperfect corpuscles. The deeper parts appeared mottled, but their cells were unchanged. The cartilage of the internal glenoid cavity was absent over about half the surface in front and internally, as well as under the semi-lunar cartilages. Where it existed, the superficial cells were removed, and bands and fibres, formed of hyaline substance, projected from the surface for $\frac{1}{700}$th of an inch. The cells in the deepest parts lay in vertical columns, in hyaline substance, which was mottled and indistinct, and those placed more superficially, were enlarged, and measured from $\frac{1}{1400}$th to $\frac{1}{700}$th of an inch. They contained corpuscles, and were irregularly distributed in the texture.

After actual cautery had been applied, for upwards of forty days, to the central part of the cartilages of the knee-joints of rabbits, similar changes to those detailed above were found; but in many parts the surface retained its level, and became calcareous, owing to deposition of calcareous matter in the walls of the cells and in their nuclei, converting them into bodies precisely like osseous lacunæ. This calcification could be observed in all stages; taking place, in some parts, where the arrangement of the cells had become irregular, and in others, where they still formed columns arranged vertically. It will be recollected that a similar formation of lacunæ from cartilage cells was before shown to take place in the costal cartilages, and in the fibro-cartilage of the ear.

In two cases, in which central portions of the articular cartilages of the knee-joint had been cut away down to the bone, 140 days before death, precisely the same changes as are detailed above, took place in the adjacent parts, the only difference being, that many of

the corpuscles which had been set free had become enlarged, and occupied spaces between the fibres, so as to give the texture the characters of fibro-cartilage.

Intense inflammation, with effusion of lymph, was the result of the temporary application of *hydrochloric acid, liquor potassæ*, or *liquor ammoniæ*, to the cartilages of the knee-joints of rabbits. The cartilage, in different places, underwent all the before-mentioned changes, being completely calcified in many parts; whilst, in others, there were various stages of production of granules in the cells, or reduction of the cells or nuclei to patches of granules found amongst fibres. In some places, the cells were large, and crowded with corpuscles;—in others, the corpuscles were interspersed amongst fibres, and were undergoing the usual conversion into nuclei;—and many parts consisted of cells lying in a very dark inter-cellular substance, which obstructed the passage of the light, even in very thin sections. Such parts were instantly rendered transparent by the action of acetic acid; the acetic solution thus obtained, giving, after neutralisation by ammonia, and the addition of oxalate of ammonia, numbers of beautifully octohedral crystals insoluble in acetic acid, and evidently those of oxalate of lime. It thus appears that the darkening of the hyaline substance is owing to the deposition of calcareous salts. In the cases just noticed, the application of the fluid was intended to be confined to the cartilages of the patella and femur, but a small quantity ran into the joints, apparently in consequence of which the superficial cells of the posterior part of the femoral condyles, and those of the cartilages of the tibia, were very much enlarged, widely separated, and connected only by a gelatinous and hyaline substance, from which the cells escaped readily by pressure. To the naked eye, these parts presented no trace of disease.

With a view to ascertain the mode of extension of disease from the bone to articular cartilage, I passed a thick brass wire, in two instances, in the dog, under the trochlear surface of the femur, at the distance of half-a-line from the cartilage; but, on examination of the parts, at periods of nineteen and thirty-four days afterwards, no change could be seen in the cartilage, except that its superficial cells in the neighbourhood of the part, were enlarged and granular. It is very probable, however, that this was the result of inflammation in the synovial membrane, as the deeper parts of the cartilage were certainly unchanged in structure, in both instances. After thirty-four days, the bone in contact with the wire was softened; and, in both cases, the whole lower end of the femur was highly vascular. Considerable lameness followed both these operations, and continued for a week or ten days, after which it could scarcely be perceived, unless during unusual movements of the limbs.

From what has preceded, it is obvious that anormal nutritive changes can be induced in the cartilages of the lower animals, with considerable facility, by irritations of various kinds—such as the making of incisions into them, the insertion of setons, the application

of ligatures, actual cautery, acids or alkalies :—again, they occur as
the result of inflammation in the synovial membrane, which leads to
the supply of nutritious fluid to the cartilage in increased quantity,
and of anormal composition ;—and, further, they result from unequal
pressure upon articular surfaces, and appear to arise when the pres-
sure is diminished, as well as when it is increased.[1]   When changes
are induced in the costal, articular, or nasal cartilages, by any cause
whatever, they are essentially similar in all cases, and affect both the
cells and inter-cellular substance. The cells become enlarged, round-
ed, or oblong, and irregularly arranged; their nuclei giving place to
a multitude of corpuscles, or to a series of granules.   The walls of
the cells next become identified with the hyaline substance, when the
corpuscles are set free, and begin to undergo other changes, elongat-
ing and becoming very evidently converted into the nuclear fibres of
fibrous tissue, or reduced to small patches of granules, which may
only become visible on acting upon the fibrous mass by acetic acid.
During the enlargement of the cells, and especially at the period of
discharge of their contents, the hyaline matrix becomes softened, and
allows the corpuscles to be freely moved in it, or pressed out alto-
gether; whilst, at a subsequent period, fibres appear in the inter-
spaces of the corpuscles, and take on the characters of those of the
white fibrous tissue.   In this way, both elements of the cartilage are
concerned in the formation of the fibrous membrane, which is des-
tined to heal the breach in the tissue, for the hyaline substance is
converted into the white fibres, and the corpuscles of the cells into
nuclear or elastic fibres.—Or, an altogether different result may take
place, especially in the case of articular cartilages, the whole thick-
ness being converted into a calcareous mass; the cartilage cells be-
coming lacunæ, and calcareous matter being also deposited in the
intercellular substance, rendering it dark and incapable of transmit-
ting the light, the surface all the while remaining perfectly smooth
and on its former level.

A very important feature in the changes induced in healthy car-
tilages by injuries, is their decided tendency to go on to a perfect
cure, by the formation of a dense fibrous membrane, or a smooth
calcareous lamina ; for in no case do they extend further into the
healthy cartilage surrounding an injured spot, than appears neces-
sary for the formation of sufficient fibrous texture to constitute the
cicatrix.

The early period at which changes occurred after great irritations,
when compared with their very tardy development when mere in-
cisions had been made in the cartilages, is of great consequence,
showing that the changes are dependent on the activity of the nutri-
tive process.   It will be remembered that the enlarged and granular
state of the superficial cells of costal cartilages was very manifest on

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[1] The disadvantages of maintaining joints in one position, for lengthened
periods, have long been familiar to surgeons.

the second day after the application of a ligature, and on the third day after the passage of a seton; whilst no change could be seen on the surfaces of incisions after seven days; and, even after forty-nine days, such parts presented very trifling changes when compared with those which had been subjected to more serious irritation.[1] Yet, as these changes were precisely similar to those which occurred under other circumstances, and went on to the formation of perfect fibrous tissue, there is no longer any reason to doubt that incisions, fractures, or other lesions of articular cartilages, are capable of complete cure by the production of fibrous tissue from the substance of the adjacent uninjured cartilage, on the establishment of an anormal nutritive process.

The general result of these researches, appears in the strongest manner confirmatory of the conclusions previously drawn from the examination of the human articular cartilages, and to be of importance in demonstrating :—

1st. That the changes of structure which result from the most varied injuries, are of similar characters in all cartilages.

2nd. That these changes invariably affect both the cells and inter-cellular substance.

3rd. That the only explanation of the nature of such changes which can be given is, that they depend upon an increased and anormal nutrition of the texture.

4th. That uncomplicated lesions of cartilage, especially such as have been artificially induced in the lower animals, manifest a very decided tendency to spontaneous cure by the production of fibrous tissue, or by calcification of the whole cartilage left after the injury.

5th. That the fibrous tissue, which heals up breaches in the texture of cartilage, contains both the white and yellow fibrous elements, the former being produced by an actual conversion of the hyaline substance into it, and the latter by elongation of the discharged corpuscles of diseased cells into nuclear fibres.

6th. That diseased action arising from circumscribed destruction of the articular cartilages of the lower animals, evinces no tendency to extend to the remaining parts of these textures, nor to involve other structures, and lead to serious disease of the joint.

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[1] The slight extent of the changes induced in cartilages by division, and the length of time taken up in their completion, have probably given rise to many of the statements that divided or fractured articular cartilages never unite ; whilst the same opinion appears to have been adopted by other observers on entirely different grounds.   Thus, Dr Leidy, in his excellent paper on articular cartilages, in the " American Journal of Medical Sciences " for April 1849, says: —As well almost might the two opposed surfaces of articular cartilage unite in a joint in which there is little motion, as for the two broken edges of one to do so.

ARTICLE III.—*On the Treatment of Phthisis Pulmonalis.* By JOHN
HUGHES BENNETT, M.D., F.R.S.E., Professor of the Institutes
of Medicine in the University of Edinburgh, Member of the
American Philosophical Society, Corresponding Member of the
Imperial Society of Physicians of Vienna, and of the Biological
Society of Paris.

MANY observing physicians have not failed to notice, that phthisis
pulmonalis is ushered in with a bad and capricious appetite, a furred
or morbidly clean tongue, unusual acidity of the stomach and ali-
mentary canal, anorexia, constipation alternating with diarrhœa, and
a variety of symptoms denominated dyspeptic, or referable to a de-
ranged state of the primæ viæ. Moreover, it can scarcely be denied
that, in the great majority of cases, these are the symptoms which
accompany phthisis throughout its progress, becoming more and
more violent towards its termination. Now, as the nutritive pro-
perties of the blood are entirely dependent on a proper assimilation
of food, and as this assimilation must be interfered with in the mor-
bid conditions of the alimentary canal, the continuance of such con-
ditions necessarily induces an impoverished state of the blood, and
imperfect growth of the tissues. Moreover, when, under such cir-
cumstances, exudations occur, it has been shown by the histologist
that they do not exhibit any tendency to perfect cell formations, but
that corpuscles are produced, which form slowly, and slowly break
down, causing softening, and the production of ulceration, which be-
comes more and more extensive as the amount of the exudation increases.

The observations of morbid anatomists have shown further, that
from one-fourth to one-third of all the individuals who die after the
age of forty in this country present traces of tubercular exudation
into the lungs. These traces consist most commonly of cretaceous
or calcareous concretions in the apices of the organ, corresponding to
puckerings on its pleural surface,[1] or to adhesions of the costal and
pulmonary pleuræ. Not unfrequently, however, dense cicatrices are
observable, extending more or less deeply into the substance of the
lung, either with or without pleural adhesions, indicating the com-
plete cure of a former ulcer. So that, while tubercular exudations
of moderate extent shrivel up, and are rendered abortive, with great
frequency, facts are not wanting to prove that even tubercular ul-
cers, of considerable extent, occasionally cicatrise, and completely
heal, while the tendency to fresh exudation is entirely overcome.
These facts, which seem now to be very generally admitted by the
profession, are daily augmenting in number, in consequence of more
accurate post-mortem investigation, and their study has undoubt-
edly done much, not only to establish the spontaneous curability of
phthisis pulmonalis, but to furnish indications of great value to the
medical practitioner. In short, a correct interpretation, and then an

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[1] A good example of this is seen in the two central figures of the plate.

Fig 1

Fig 3

Fig 2

Fig 4

Drawn by H. Stewan
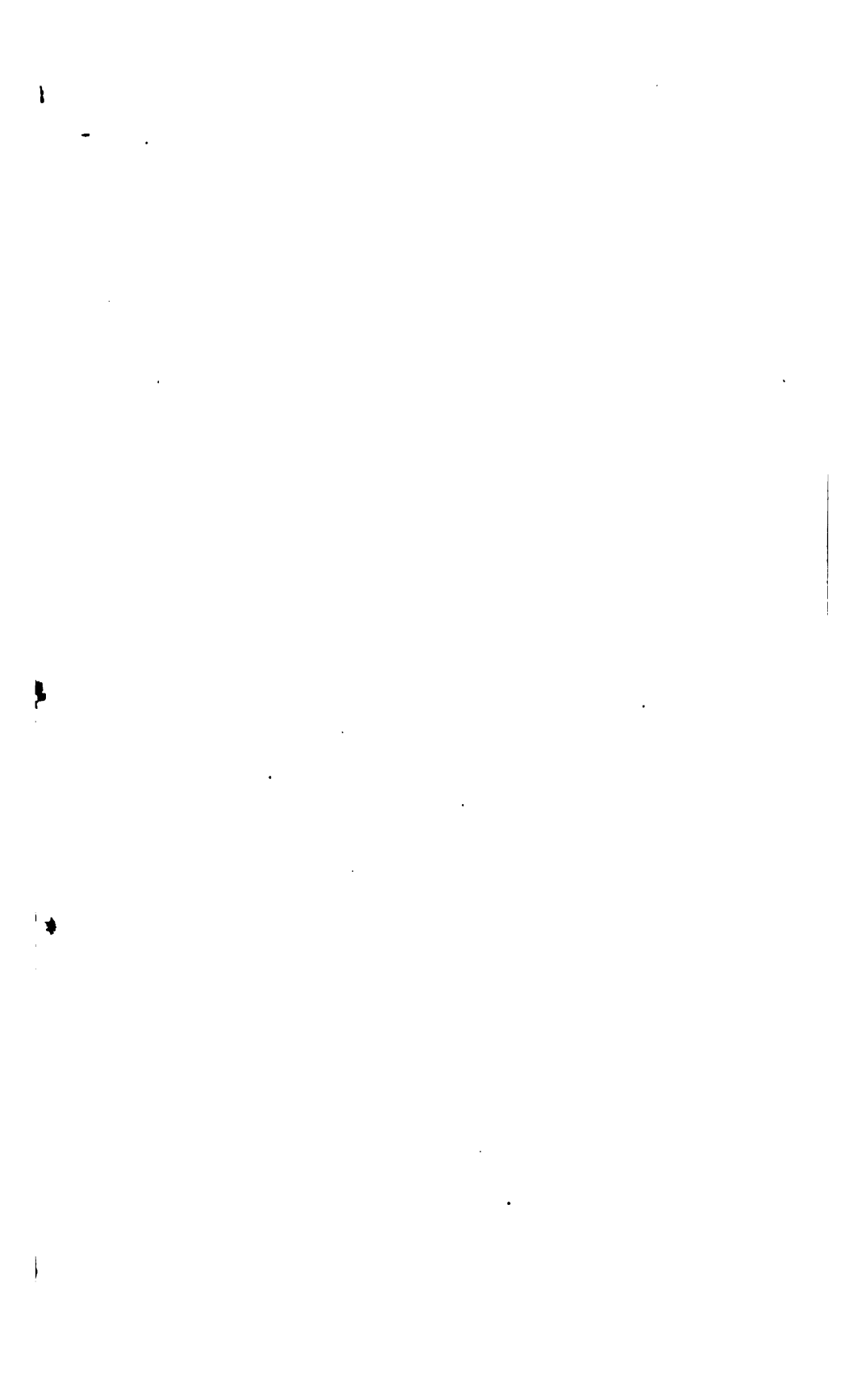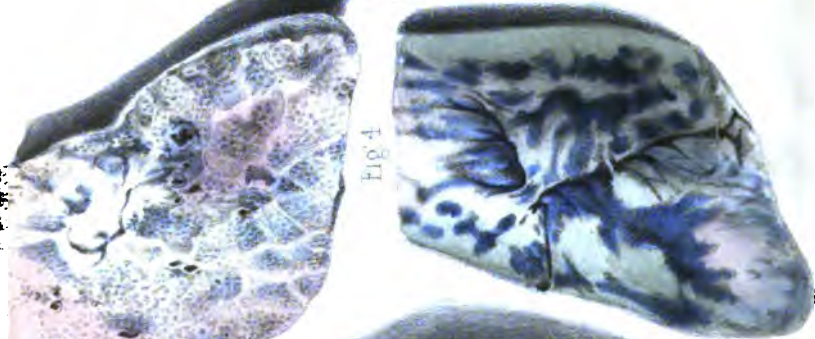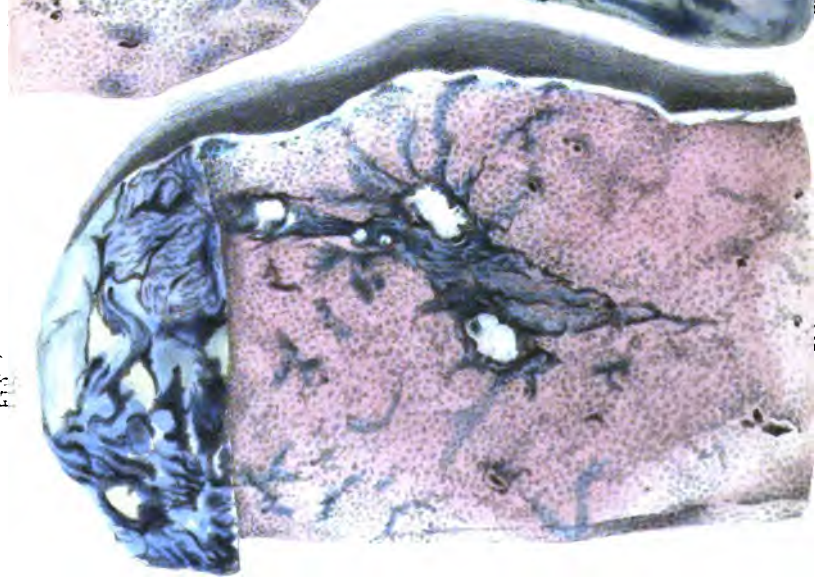
Fig. 5

imitation, as far as possible, of the manner in which nature operates, must be the foundation for a rational treatment of the disease.

The following case offers a well-marked instance of the spontaneous cure of phthisis, and will serve to point out the manner in which the cure was accomplished:—

CASE I.—John Keith, æt. 50, a teacher of languages, was admitted into the Royal Infirmary, February 8, 1844, in a state of coma, and died an hour afterwards. On examination, the membranes of the brain, at the base, were unusually congested, and covered with a considerable exudation of recently coagulated lymph, here and there mingled with bloody extravasation. The apex of the right lung presented the remarkable cicatrix represented in the plate, consisting of dense white fibrous tissue, varying in breadth from one-fourth to three-fourths of an inch, and measuring about three inches in length. (Fig. 2.) The pleural surface in its neighbourhood was considerably puckered. On making a section through the lung, parallel with the external cicatrix, the substance immediately below presented linear indurations, of a black colour, together with five cretaceous concretions, varying in size from a pin's head to that of a large pea. (Fig. 1.) The surrounding pulmonary substance was healthy. The apex of the left lung was also strongly puckered, and contained six or seven cretaceous concretions, each surrounded by a black, dense, fibrous cyst.

A very respectable-looking and intelligent man, who attended the post-mortem examination, informed me that Keith, in early life, was in very indifferent circumstances, and had supported himself as a writer. At the age of two-and-twenty, or three-and-twenty, he laboured under all the symptoms of a deep decline, and his life was despaired of. About this time, however, he was lost sight of by his friends; but it was afterwards ascertained that he had become a parish schoolmaster, in the west of Scotland, and that his health had been re-established. He returned to Edinburgh six years before his death, and endeavoured to gain a livelihood by teaching Latin and French. He succeeded but very imperfectly, and fell into dissipated habits. Latterly he had become subject to attacks of mania, apparently the result of drink. It was after an unusually severe attack of this kind that he was brought into the Infirmary, where he died in the manner previously described.

This case points out the following important facts,—1st, That at the age of twenty-two or twenty-three the patient had a tubercular ulcer in the right lung, the size of which must have been very considerable when the contracted cicatrix alone was three inches long. 2d, That tubercular exudations existed in the apex of the left lung. It is, therefore, very probable that the statement made by his friend at the examination was correct—namely, that he laboured under all the symptoms of advanced phthisis pulmonalis. It is shown, 3dly, that, after receiving the appointment of a parish schoolmaster, after changing his residence and occupation, while his social condition was greatly improved, these symptoms disappeared. We may consequently infer, that it was about this period that the excavation on the right side healed and cicatrised, while the tubercular exudations on the left side were converted into cretaceous masses, and so rendered abortive. It demonstrates, 4thly, that when, at a more advanced age, he again fell into bad circumstances, and even became a drunkard, tubercular exudations did not return, but that delirium tremens was induced, with simple exudation on the membranes of the brain, of which he died.

From these facts I think we are warranted in drawing the conclusion, that if, during the advanced period of phthisis pulmonalis, those means can be discovered which check further tubercular exudation, and keep up the strength and nutritive processes of the economy, that such exudations as have occurred will be rendered abortive, and that even large ulcerations will heal up and cicatrise. The important point practically is to ascertain what these means are, and how they may be put into operation.

Now a careful examination of phthisical cases will, I think, show that the great obstacle the practitioner has to contend with are the dyspeptic symptoms, which render all his efforts at nourishing the patient in the ordinary way useless. Such individuals have a most capricious appetite, frequently loathe all kinds of animal food, and it will be found that even when they *say* that the appetite is good, and that they live well, the diet actually consumed is either deficient in quantity or in quality. Nothing, again, is more common in the progress of such cases than the temporary improvements which follow a change of diet, of locality, or of temperature. How frequently do poor patients, on coming into an hospital, get better merely from enjoying rest and the regular diet of the institution. How often, after a short journey, or on reaching what has been considered a favourable locality, are the friends of consumptive patients in the higher classes rendered happy by the temporary marked improvement which takes place. I consider that such amendments will always be found commensurate to the stimulus given to the nutritive processes of the economy.

An observation of the circumstances which precede the disease, or its so-called causes, clearly indicate imperfect digestion and assimilation as its true origin. Thus phthisis is essentially a disorder of childhood and youth—that is, a period of life when nutrition is directed to building up the tissues of the body. Diminish the proper quantity of food taken by a healthy man, tubercular diseases are not induced, but if this be attempted with children or young persons, they are a most common result. Thus scrofula and tubercle are not prevalent in armies and fleets whatever privations they may be exposed to ; but they abundantly exist in foundling hospitals, factories, and among the young of the poor and labouring classes of the community, and especially among tailors, sempstresses, and others who follow sedentary employments. In the higher classes they result from imperfect and insufficient lactation during infancy, or the irregular diet caused by carelessness or over-indulgence. No doubt they may frequently be observed in persons whose parents or relatives have been similarly affected. From facts of this kind, it has been supposed that hereditary predisposition, a vitiated atmosphere, changeable temperature, certain occupations, humidity, particular localities, absence of light, and so on, predispose to phthisis. Very frequently several of these are found united, so that it is difficult to ascertain the influence of each. When they so operate, how-

ever, they invariably produce, in the first place, more or less disorder of the nutritive functions, and are associated with dyspepsia, or other signs of mal-assimilation of food. Cases analogous to the following are exceedingly common.

CASE II. An Irish girl left her own country, at the age of seventeen, to work as a field labourer in Scotland. In Ireland she lived on potatoes and sweet milk, and once a week had fish or a little meat. The quantity was abundant. In Scotland she lived on coarse oatmeal porridge and dry bread, with butter milk, and did not taste fish or meat once a month. Under this diet her health gradually became affected, and she entered the Royal Infirmary at the age of twenty-one, with all the symptoms and signs of advanced phthisis.

CASE III. A lad, aged sixteen, of robust health, whose parents and relations were equally healthy, committed a theft. He was imprisoned in goal for three months, confined in a damp stone cell, and lived on the ordinary prison fare. His health insensibly declined. On being liberated he could not obtain employment, and found that his strength had greatly diminished. Two months afterwards he applied at the Royal Dispensary, labouring under phthisis pulmonalis in its advanced stage.

CASE IV. A woman, aged twenty-six, applied at the Royal Infirmary in 1843, who was greatly emaciated, and complained of harrassing cough and expectoration. On examining the chest, perfect dulness existed under the right clavicle, with loud mucous rale, and imperfect pectoriloquy. The apex of the left lung was healthy. She had a son, aged six years, a perfect picture of health, and an infant at the breast, seven months old, also quite healthy. The mother died in 1844, both children are living, for the father, having good wages, is enabled to give them plenty of food.

It is unnecessary to multiply cases of this description. The more they are examined into, the more do I feel persuaded it will appear that the causes of phthisis are not hereditary influences, vitiated atmosphere, &c. &c., although these may co-operate, but almost invariably such circumstances as induce impoverished nutrition resulting from an improper quantity, quality, or assimilation of food.

From a study of the symptoms, causes, morbid anatomy, and histology of phthisis pulmonalis, we are, therefore, led to the conclusion, that it is a disease of the primary digestion, causing, 1st, impoverishment of the blood; 2d, local exudations into the lung, which present the characters of tubercular exudation; and, 3d, owing to the successive formation and softening of these, and the ulcerations which follow in the pulmonary or other tissues, the destructive results which distinguish it. Further observation shows, that circumstances which remove the mal-assimilation of food frequently check further tubercular exudations, while those which previously existed become abortive, and that occasionally more extensive excavations in the pulmonary tissue may, owing to like circumstances, heal up and cicatrize.

The foregoing considerations render it evident, that the cure of phthisis by art will be proportionate to our power of regulating the nutritive powers in that disease, and controlling those circumstances which induce, 1st, the diseased constitution of the blood; 2d, the local exudation; and, 3d, the ulceration of the pulmonary tissue. A discussion of these subjects would lead us into a history of nutrition and exudation, with its results. Referring to the last number of

this Journal for observations on the latter part of the subject, I shall content myself at present with a short resumé of what I have formerly published, as to the nature of the altered nutrition which exists in phthisis pulmonalis, and other tubercular diseases.[1]

A healthy nutrition of the body cannot proceed without a proper admixture of albuminous and oleaginous elements. This may be inferred from the physiological experiments of Tiedemann and Gmelin, Leuret and Lassaigne, Magendie, and others; from an observation of the constituents of milk, the natural food of young mammiferous animals; from a knowledge of the contents of the egg, which constitute the source from which the tissues of oviparous animals are formed before the shell is broken; and from all that we know of the principles contained in the food of adult animals. The researches of chemists, such as those of Prout, Liebig, and others, point to the same generalisation, when they assert that carbonised and nitrogenised food are necessary to carry on nutrition, inasmuch as oil is a type of the one, and albumen of the other. The chemical theory is imperfect, however, because it does not point out *how* these elements form the tissues; for it is not every form of carbonised or of albuminous food that is nutritious, but only such kinds of them as are convertible into oil and albumen.

The reason of this was first pointed out by Dr Ascherson of Berlin, in 1840, and made known by me to the profession in this country in 1841. I have since endeavoured to show that the elementary molecules formed of a particle of oil, surrounded by a layer of albumen, which are produced, as he described, by rubbing oil and albumen together, are not developed directly into blood-globules and other tissues, as he supposed, but must first pass through a series of transformations, a knowledge of which is highly important, not only to a comprehension of nutrition generally, but especially to that anormal condition of it which occurs in phthisis. Thus the successive changes which occur for the purposes of assimilation in the healthy economy may be shortly enumerated as follows :—1st. Introduction into the stomach and alimentary canal of organic matter. 2d. Its transformation by the process of digestion into albuminous and oily compounds : this process is chemical. 3d. The imbibition of these

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[1] Treatise on the Oleum Jecoris Aselli. London. 8vo. 1841.

On the Frequent Spontaneous Cure of Pulmonary Consumption, and the Indications furnished by Pathology for its rational treatment.—*Edin. Med. and Surg. Journal.* 1845.

On the Minute Structure and Chemical Composition of Tubercular Deposits. —*Northern Journal of Medicine.* 1846.

On the Structural Relation of Oil and Albumen in the Animal Economy, &c. Read to the Royal Society of Edinburgh, 19th April 1847.—*Monthly Journal.* September 1847.

Appendix to the Treatise on the Oleum Jecoris Aselli. Edin., Nov. 1847.

On Cancerous and Cancroid Growths. Edinburgh. 8vo. 1849.

In the above works and memoirs will be found a full exposition of the molecular theory of the action of cod-liver oil, long before it was thought of by other writers.

through the mucous membrane in a fluid state, and their union in the termini of the villi and lacteals to form elementary granules and nuclei : this process is physical. 4th. The transformation of these first into chyle corpuscles, and, secondly, into those of blood, which is a vital process. It is from this fluid, still further elaborated in numerous ways, that the nutritive materials of the tissues are derived, so that it must be evident, if the first steps of the process are improperly performed, the subsequent ones must also be interfered with. Hence we can readily comprehend how an improper quantity or quality of food, by diminishing the number of the elementary nutritive molecules, must impede nutrition.

The peculiarity of phthisis, however, is, that an excess of acidity exists in the alimentary canal, whereby the albuminous constituents of the food are rendered easily soluble, whilst the alkaline secretions of the saliva and of the pancreatic juice, are more than neutralized, and rendered incapable either of transforming the carbonaceous constituents of vegetable food into oil, or of so preparing fatty matters introduced into the system, as will render them easily assimilable. In consequence, more albuminous than fatty matters enter the blood, and the necessary waste of structure is supplied by the absorption of the adipose tissues of the body. Hence the emaciation which characterizes the disease. In the meanwhile, the lungs not having so much carbon to excrete in the form of carbonic acid, become especially liable to local congestions, leading to exudation of an albuminous kind, which is tubercle. This, in its turn, being deficient in the necessary proportion of fatty matter, elementary molecules are not formed so as to constitute nuclei capable of further development into cells,—they therefore remain abortive, and constitute tubercle corpuscles. Thus the local disease is added to the constitutional disorder, and that compound affection is induced, which we call phthisis pulmonalis—consisting of symptoms attributable partly to the alimentary canal, and partly to the pulmonary organs.

To improve the faulty nutrition which originates and keeps up the disease, it is of all things important, therefore, to cause a larger quantity of fatty matter to be assimilated. A mere increase in the amount, or even quality of the food, will often accomplish this, as in the case of Keith (Case I). The treatment practised, some years ago, by Dr Stewart, of Erskine, which consisted in freely administering beef-steaks and porter, and causing exercise to be taken in the open air, excited considerable attention from its success. I have been informed, that in some parts of America the cure consists in living on the bone marrow of the buffalo, and that the consumptive patient gets so strong in this way, that he is at length able to hunt down the animal on the prairies. All kinds of food rich in fat, will not unfrequently produce the same effects, and hence the value long attributed to milk, especially ass's milk—the produce of the dairy, as cream and butter, fat bacon, caviar, &c.

But, in order that such substances should be digested and assimi-

lated, the powers of the stomach and alimentary canal must not have undergone any great diminution. In most cases it will be found that the patient is unable to tolerate such kind of food, and that it either lies undigested in the stomach, or is sooner or later vomited. Under these circumstances, the animal oils themselves are directly indicated, by giving which, we save the digestive apparatus, as it were, the trouble of manufacturing or separating them from the food. By giving considerable quantities of oil directly, a large proportion of it is at once assimilated, and is rendered capable of entering into combination with the albumen, and thereby forming those elementary molecules so necessary for the formation of a healthy chyle. Such, it appears to me, is the rationalé of the good effects of cod-liver oil.

Since I introduced this substance to the notice of the profession as a remedy for phthisis, in 1841, I have continually prescribed it in hospital, dispensary, and private practice. I need not, perhaps, say, that I have given it in a very large number of cases, and have observed its effects in all the stages of the disease, and under almost every circumstance of age, sex, and condition. I have had the most extensive opportunities of examining the bodies of those who have died after taking it in considerable quantities, and am still observing the cases of many persons who may be said to have owed their lives to its employment. Further, I have carefully watched the progress it has made in the good opinion of the professional public, and perused all that has been published regarding it in the literature of this and other countries. It were certainly easy for me, therefore, to write at great length on this subject; but I do not see that anything of utility could be added to what I have already published. The following is a summary of my views regarding cod-liver oil, as a remedy for phthisis :—

1. Cod-liver oil is, as M. Taufflied pointed out, an *analeptic* (αναλαμβανω, to repair), and is indicated in all cases of anormal nutrition dependent on want of assimilation of fatty matter.

2. It is readily digestible under circumstances where no other kind of animal food can be taken in sufficient quantity to furnish the tissues with a proper amount of fatty material.

3. It operates by combining with the excess of albuminous constituents of the chyme, and forming in the villi and terminal lacteals those elementary molecules of which the chyle is originally composed.

4. Its effects in phthisis are to nourish the body, which increases in bulk and in vigour; to check fresh exudations of tubercular matter, and to diminish the cough, expectoration, and perspiration.

5. The common dose for an adult is a table-spoonful three times a-day, which may often be increased to four, or even six, with advantage. When the stomach is irritable, however, the dose to commence with, should be a tea or dessert-spoonful.

6. The kind of oil is of little importance therapeutically. The pure kinds are most agreeable to the palate ; but the brown coarser

kinds have long been used with advantage, and may still be employed with confidence whenever cheapness is an object.[1]

7. I have never observed its employment to induce pneumonia—as it has been lately supposed to do by Dr Benson. On the other hand, nothing is more common than to find after death more or less pneumonic condensation around tubercles.

8. Neither have I ever been able to trace fatty liver or kidney to its use, however long continued, although such complications of phthisis are also exceedingly frequent.

It is rare that the administration of cod-liver oil will prove sufficient to conduct a case of phthisis pulmonalis to a happy conclusion. It is the more important to notice this, since it has become an object of commercial enterprise, and its use in every disease advocated ; for, although it will frequently check phthisis for a time, and nourish the exhausted frame, great attention to the future progress of the case, and a careful management of the various symptoms and conditions presented, will be necessary, before the crude tubercles become cretaceous and encysted, and the ulcerations in the lungs completely cicatrized. At present this remedy is very extensively given, and its temporary good effects are allowed ; but few persons in this country have watched for a sufficiently long time the progress of phthisical cases placed under its influence, so as to enable them to speak with any confidence as to the ultimate result. To prevent disappointment, therefore, and the abandonment of a valuable remedy from its excessive and injudicious administration, I now propose to detail, shortly, some very important cases of phthisis which have been under my observation, for periods varying from five to nine years, and indicate the other circumstances it will be necessary to attend to, with a view of rendering even cod-liver oil of permanent advantage.   (*To be continued.*)

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[1] It has lately been maintained, that the *purity* of the oil favours its therapeutic action. Not to mention how opposed this idea is to the long experience of numerous practitioners in Germany, I may state a fact, which is alone sufficient to refute it. When in Birmingham, last autumn, I was shown, at the General Hospital there, by Dr Heslop, the resident medical officer, the common brown oil, used by curriers in the preparation of leather, of which, he told me, between two and three gallons were consumed every week in the institution. It cost only 2s. 6d. a gallon, and was employed on the ground of cheapness, but produced all the good effects of the remedy in a marked degree. Still the efforts now very generally making by druggists to improve and cheapen this substance ought not to be encouraged, for there can be no doubt it is generally much more agreeable, if not more useful, for the patients to take a fresh and pure, than a rancid and an impure, oil. In common justice to Messrs Parker and Co., oil merchants, Edinburgh, it should not be forgotten that they have manufactured cod-liver oil, which has never been surpassed in purity, and which has been extensively employed by the profession during the last *eight years,* and this at the moderate price of 9s. a gallon. Neither should it be forgotten by those in London, who lay claim to any merit for having purified this substance, that it has been from time immemorial made so tasteless by the Shetlanders, as to be used instead of butter in cooking ; and that Dr Donovan, of Dublin, made it perfectly pure in 1840. (*Treatise on the Ol. Jecoris Aselli,* p. 26.)

ARTICLE IV.—*Cases in Surgery.*   By JAMES SYME, Esq., Professor
of Clinical Surgery, Edinburgh.

LIGATURE OF THE SUBCLAVIAN ARTERY FOR ANEURISM.

Mr H., a mercantile gentleman, about fifty years of age, in the course
of last summer, while travelling by railway, was thrown with great
force to the opposite side of the carriage, in consequence of the train
being suddenly stopped, and struck the fore part of his right shoulder
on one of the partitions between the seats.   He did not sustain much
inconvenience from this injury at the time, but before long began to
suffer from pain in the neighbourhood of the injured part, which,
being ascribed to rheumatism, was treated by leeching, fomentations,
and friction.   Having experienced no relief from the use of these
means, he applied to Dr Begbie, who examined the shoulder, and
finding a pulsating tumour below the clavicle, proposed that I should
see the case.

The tumour occupied the hollow on the inner side of the shoulder,
and lay under the pectoral muscle, close up to the clavicle, but did
not ascend above the bone.   It ceased to pulsate when the subclavian
artery was compressed, which could not be effected without consider-
able care and much force, from the neck being remarkably thick.   The
patient possessed a robust frame, with an apparently very energetic
temperament; but so far as we could ascertain, did not labour under
any other disease than that for which our assistance was required.
He stated that there was nearly constant uneasiness proceeding from
it, and occasionally paroxysms of agony greater than he could endure.
In these circumstances we felt no hesitation in recommending that
the artery should be tied without any delay, except what might be
requisite for moderating the force and frequency of circulation.   With
this view he was confined to the house for a few days in bed, on a
restricted diet, and under the action of moderate laxatives.

On the 23d of October, in the presence of Dr Begbie, and with
the assistance of Dr Richard Mackenzie, I performed the operation.
The patient lay on a table, with his head towards the window—an
arrangement which, after trying different methods, I consider by far the
most convenient; and the incisions were made as usual, one extending
along the clavicle, while another proceeded nearly from its centre at a
right angle, in an upward direction, parallel with the external edge of
the sterno-mastoid muscle. The external jugular vein, which lay much
in the way, being retained in its position by a large cross branch, was
cut across, and tied at both orifices.   A pretty large mass of fat and
lymphatic glands, occupying the triangular space under the platysma
myoides, was dissected out, so as to facilitate access to the artery,
which was then readily exposed, and tied by a single silk thread.

Next morning Dr Begbie and I were urgently summoned to see
the patient, who had been extremely restless during the night, in-

sisting upon getting out of bed, and exciting great alarm, by cold sweats, fainting, and other unpleasant symptoms.   We found him much more comfortable than he had been; and, on the whole, in a satisfactory state, with the exception of a very frequent pulse, which was about 120.   After this everything went on favourably, the pulse gradually subsiding in the course of ten days or a fortnight to the natural standard.   The wound healed kindly, and the ligature separated on the twenty-third day, but recovery was then delayed by a slight attack of erysipelas.   The patient is now, and has been for some time past, perfectly well, without any perceptible trace of the aneurism.

The points of interest in this case seem to be,—1. The mode of production by a blow, which could act only by bruising, and not by extending the coats of the vessel; 2. The division of the jugular vein without any bad consequence, which tends to recommend this as the proper course when the vessel does not admit of being readily held aside, as happened, and led to the same procedure, on the only occasion that Mr Liston tied the subclavian artery with success; and 3. The alarming symptoms which occurred during the night after the operation, and would certainly have been attributed to the influence of chloroform, if any had been administered to the patient.

I have now operated upon five cases of axillary aneurism, three by ligature of the subclavian, and two by amputation at the shoulder-joint.   Four of the patients are alive and well; in the fifth the artery was very much diseased, as might have been suspected from the fact, that I had formerly operated upon the patient for popliteal aneurism, and, as was positively ascertained after death, at the end of a fortnight from the operation, in consequence of hemorrhage.   In a sixth case, I commenced the operation, but desisted from proceeding with it as the tumour was found to ascend too high for the safe application of a ligature.   Electro-puncture was afterwards tried without any good effect.

With regard to the general question respecting the treatment of aneurism, it may be added, that I have tied the femoral artery *eighteen* times without any bad effect from the operation.   In sixteen of these cases there was either a popliteal or femoral aneurism. Fifteen were cured, and the sixteenth, after appearing to be so, ultimately proved fatal through suppuration of the tumour.   I have also operated in eleven cases of brachial aneurism, with complete success in all of them.   The strenuous efforts of some surgeons in Dublin to revive pressure as a substitute for ligature, has led to trials of this plan in Edinburgh.   But I am not aware of its having proved successful, even in a single instance.

EVULSION OF TENDONS.

I had lately occasion, in my clinical lecture, to notice the not very rare case of a last or distal phalanx being torn off, together with the

tendons attached to it. A boy having been admitted on account of losing both his thumbs in this way, from unfortunately allowing them to be engaged in a printing machine, it was remarked that the thumb and little finger are most liable to suffer this injury, in consequence of their exposed situation, and also that, however serious the anticipation of inflammation, followed by extensive suppuration, might be on theoretical grounds, there was reason, from all former experience, to expect that little disturbance of either a local or general kind would be occasioned. A few days afterwards I received the following letter from my friend Dr Blacklock, of Dumfries :—

"Dumfries, 19th January, "1850.

"MY DEAR SIR,—The nature of the accident, which the finger and gold ring enclosed herewith will help to explain, induces me to give you some account of it. Mr J. M., aged 27, when passing along the frozen footpath in Buccleuch Street, yesterday forenoon, slipped, and, in falling, attempted to catch hold of an iron railing on his right. In doing so, his little finger, upon which he wore the ring, got fixed on the point of one of the iron bars, in consequence of which its last phalanx, along with the covering of the second, and the whole tendon of the flexor digitorum profundus, were instantaneously removed.

"When Mr M. looked up, he saw, to his astonishment, his finger, with the gold ring, resting upon the iron bar, like, as he himself expresses it, ‘an extinguisher upon a candle.’

"The second phalanx being entirely denuded, I soon afterwards removed it; and to-day, notwithstanding the forcible manner in which the long tendon still attached to the finger was separated from its connection with the muscle, there is little or no uneasiness in the arm, or suffering of any kind.—I am, &c.,

"ARCHD. BLACKLOCK.

"Professor Syme, Edinburgh."

PROLAPSUS OF THE RECTUM.

The disease usually called "prolapsus ani," and which is in general attributed to deficiency in the contractile force of the sphincter, depends merely upon a morbid enlargement of the lining membrane of the bowel, which always admits of being easily, safely, and effectually remedied through the use of ligatures. When I began to advocate this mode of treatment—more than twenty years ago—internal hemorrhoids, as the growth in question may

more properly be designated, were regarded with the greatest dread as subjects of surgical treatment, hemorrhage from cutting being no less apprehended than inflammation from tying, so that the late M. Dupuytren felt justified in recommending the actual cautery, notwithstanding all the horrors of its application, especially to such a part of the body, as the most expedient means of affording relief from the complaint. The danger of excision has certainly not been overrated, whether the hemorrhage attending it, or, what is still more formidable, the risk of inflammation excited by it, be taken into account. In the latter way valuable lives are lost every year, and the popular dread of interference maintained. But the ligature, when properly applied, is *perfectly safe* and *effectual ;* the conditions being, as I have all along explained, that the whole of the diseased growth or growths should be comprehended, and that the threads should be drawn so tightly as not merely to strangle, but completely to arrest all circulation through the hemorrhoidal texture. It may be added, that this method is attended with less pain, either at the time or subsequently, than any of the others which have been proposed. Patients labouring under what is commonly called "prolapsus," may, therefore, be comforted with the assurance, that they may throw aside their uncomfortable bandages, and submit themselves to surgical treatment, in full confidence of obtaining complete relief. The true "prolapsus," or descent of the rectum, from weakness of the sphincter, and independently of disease in the coats, is comparatively a very rare infirmity ; but, when it does occur, may still admit of remedy, by a different mode of procedure.

J. H., aged 28, was recommended to my care, in the month of November last, by a gentleman who felt interested in his welfare. He had been for a long while in bad health, and had tried a variety of means, with partial relief, but no permanent benefit.

Suspecting, from the peculiar complexion of his lips, and countenance in general, that he was suffering from the habitual loss of blood, I asked if he had any protrusion or bleeding from the anus, and was informed that he suffered from both, but had never thought of saying so to his medical advisers, as he did not think there could be any connection between these local symptoms and his general derangements. I urged the propriety of an operation, and, with a view to its performance, sent him to the hospital, where he was admitted on the 16th of November last.

Before taking him into the theatre where my lectures are delivered, I desired the efforts necessary for bringing the whole extent of the disease into view to be made, in order that the ligatures might be applied. But when he presented himself, instead of the hemorrhoidal tumours or tumour which had been expected, the whole rectum seemed as if turned inside out, forming a large cylindrical swelling, at least five inches long by ten in circumference, covered with bloody mucus. It was stated that such a protrusion took place every time

the bowels were moved, and that the quantity of blood lost was often much more than we had seen. When the bowel had been returned, nothing could be discovered amiss with the anus, except that the skin surrounding it was unusually relaxed, and lay in numerous folds, radiating from the orifice. By means of scissors and forceps, I removed the whole of this redundant skin, leaving merely the thin bands that occupied the spaces between the folds, and then desired the patient to maintain the horizontal posture, without any intermission, even for the evacuation of his bowels—in accomplishing which he was especially warned against making exertions.

The protrusion never again appeared, and the patient, after remaining under observation for some weeks in town, returned to the country; whence, in reply to an inquiry as to his present state, he writes to say, that the local complaint is completely cured, and that his general health is greatly improved.

GUN-SHOT WOUND BY AN AIR-GUN.

In the month of August last, a gentleman went from Edinburgh to visit some friends in Morayshire; and soon after his arrival there, going out to walk, carried with him an air-gun, which was said to kill at the distance of thirty yards. He had not proceeded far until the peculiar sound which attends a discharge intimated that one had occurred accidentally. On looking round to ascertain, if possible, what direction the ball had taken, he saw blood oozing through the upper leather of his shoe, which was fortunately a thick one, and at the same time felt a smart pain in the ball of the great toe. In these circumstances, the assistance of Dr Paul, of Elgin, having been requested, he found a small depressed aperture, over the articulation of the toe with the metatarsal bone, but could not see or feel any trace of the ball, and, fearing that it might be lodged in the joint, or have so injured the bone as to occasion serious consequences, advised the patient's immediate removal to Edinburgh.

I saw him immediately after his arrival, along with his usual attendant, Dr John Smith, and was glad to learn that he had not experienced any bad effect from the long journey—the state of matters being precisely the same as described in a letter to me from Dr Paul. There was no swelling or any indication of the ball perceptible by external examination. But when the sharp point of a tenaculum was carefully introduced into the wound, it encountered a resisting substance, which was easily distinguished from bone, and recognised to be lead by the peculiar sensation which is caused by scratching it with a harder metal. I therefore did not hesitate to enlarge the opening sufficiently to permit the insertion of a little curved instrument which dentists use for scaling teeth, and, by means of it, readily raised the ball, which was about the size of a pea, from its place of concealment under the extensor tendon of the toe. A moderate degree of suppuration followed this operation, and in the course of a week after it, a small amount of sloughy substance was separated

from the wound, which then gradually contracted, but did not completely close until the end of three or four weeks, when a thin scale of bone was detached. The patient then quickly recovered the use of his foot, which is not the least impaired by the injury.

This case appears to possess some interest from the effects of the wound so closely resembling those inflicted by the force of gunpowder. Had it occurred in the olden time, when these peculiarities were attributed to the poisonous influence of that agent, such an observation might have been of more service than at present, when correct opinions are entertained upon the subject.

DIVISION OF THE NERVE FOR TIC DOLOUREUX.

A much respected provincial practitioner of the medical profession had suffered for more than two years, from the most agonising form of Tic. The seat of pain was the left side of the upper lip, together with the adjoining part of the nose and cheeks. He was never free from uneasiness, which frequently, latterly almost constantly, changed to the most intolerable sensation of burning and tearing, infinitely surpassing the power of description. These paroxysms often occurred spontaneously, and were sure to be induced by the slightest local irritation, such as touching the nose, or raising the lip. Speaking, eating, and indeed every action requiring movement of the face, was therefore a subject of dread. He had become emaciated from inability to masticate his food, and his countenance had acquired the remarkable expression which results from long-continued suffering, with the habitual apprehension of its recurrence. All sorts of remedies had been tried again and again to the fullest extent. Mercury, arsenic, iron, bark, croton oil, with regulation of diet, change of air by excursions to the continent,—but all in vain beyond temporary and imperfect relief.

In these circumstances the patient, about six weeks ago, came to Edinburgh, for a consultation with Mr Nasmyth and myself, as to the expediency of removing some of the teeth; which after the most careful examination, appeared to us altogether free from suspicion, and therefore were allowed to remain. Mr Nasmyth then proposed division of the infra-orbitary nerve, and although entertaining little expectation of benefit from this measure, I readily undertook its performance, through anxiety to afford any chance of relief from sufferings so painful to witness, especially in one of my oldest and most esteemed friends. Chloroform having been administered, so as to produce its full effect, I made an incision a little below and nearly parallel with the lower edge of the orbit, searched with the point of my finger for the nerve, seized it between the blades of torsion forceps, and cut out the included portion. The bleeding, at first profuse, soon ceased, and the wound required no dressing, except a piece of wet lint placed over it.

The patient, on awakening from his sleep, found himself free from pain, and was able in the course of the day to take some food with

comfort. From that time to this, he has not had the slightest
pain in any part connected with the divided nerve, but at first ex-
perienced some alarm from occasional uneasiness in the forehead and
eyelids. These unpleasant feelings have now almost entirely left him,
and he finds his general health daily improving. He has resumed
his professional duties, and indulges the hope of being permanently
relieved from his tormenting disease. How far these expectations
are to be realised, time only can determine; but in the meanwhile I
think it right to mention the case, as, even at this early stage of its
progress, affording ground for reconsidering the question as to the
treatment of painful nervous affections by operation.

The views of Mr Abernethy as to the dependence of such com-
plaints upon derangement of the digestive organs, and the propriety of
treating them by general rather than local means, however just and
beneficial in the main, may perhaps in some instances have been
followed to an injurious extreme; and it is possible that the bad
repute into which operations for Tic have fallen, may in some mea-
sure be attributable to their imperfect performance, since, before the
introduction of anæsthetic agents, it must have been exceedingly
difficult to make sure of completely accomplishing the object desired
in operating, while the patient was required to endure the inflic-
tion of most exquisite agony. In many painful affections of the
scalp, several of which I saw along with the late Dr Abercrombie,
complete and permanent relief was obtained by a free incision
through the integument to the bone. Yet in these cases there was
not only derangement of the general health, but every reason to be-
lieve that it had preceded and given rise to the local affections;
which, being thus established, resisted constitutional remedies, and
reacted in maintaining the disorder of the system,—in proof of
which it may be added, that the incision was followed not only by
relief from pain, but by restoration of health and vigour.

Part Second.

REVIEWS.

*Lectures on Electricity and Galvanism in their Physiological and
Therapeutical relations, delivered at the Royal College of Physicians.
Revised and extended. By* GOLDING BIRD, A.M., M.D., F.R.S.,
&c. &c. *London*, 1849.

IN the spring of 1847, Dr Bird, having been appointed one of the
Lecturers at the Royal College of Physicians, choose for his sub-

ject, " Electricity and Galvanism in their relation to Physiology and Therapeutics." The lectures were afterwards reported in the " Medical Gazette," and caused so great a demand for the numbers in which they had appeared, that their author was induced by his publishers to re-produce the work in its present extended form. After so decided an expression of approbation on the part of the profession, we have some reluctance in confessing that we read Dr Bird's work with disappointment. As is frequently the case with electricians when treating on physiological questions, our author has, in our opinion, accorded undue importance to trifling experiments and facts which he thinks tend to prove the dependence of the vital actions on electricity; and has omitted evidence of much greater importance which might be urged against the probability of the theories and hypotheses he has advanced.

After a well written summary of the phenomena afforded by electricity in its static and dynamic state, and the various modes in which they are manifested in inanimate matter, Dr Bird proceeds to notice the discovery of animal electricity by Galvani, and the subsequent researches of Volta, Aldini, Valli, and Donne, and lastly of Matteucci, as to the development of electric currents in the muscular and secretory organs of living animals;—and he is led to conclude, from the evidence he has adduced, that electricity exists in the body in three states.

" 1st. In a state of equilibrium, common to all forms of ponderable matter.
2nd. In a state of tension capable of acting on the electrometer, giving to the whole body a generally positive condition, and arising, in all probability, from the disturbance of the normal electric equilibrium by the processes of evaporation and respiration.
3rd. In a state of current, a dynamic condition, arising from the disturbance of equilibrium by the union of carbon with oxygen in the capillary system, and from other chemical processes going on in the body; such currents, although suspected to be everywhere existing, having been actually detected between the skin and mucous membrane, the stomach and liver, and the interior and exterior of muscular structures."—Pp. 47, 48.

With regard to the second conclusion; Pfaff and others have observed electricity existing in a state of tension in the human body when insulated, but in quantity so exceedingly minute, as to be perceptible only by electro-metric apparatus of the most delicate construction. We cannot, however, concur with Dr Bird in his opinion, that the whole body is generally maintained in a state of tension by the processes of evaporation and respiration. Setting aside the improbability of the body, when uninsulated, being in a different electric condition to that of the earth on which it rests, the often cited experiment of Volta, on which our author grounds his opinion, is a fallacious one. It is true that on dropping a hot cinder into water placed on the electrometer, a divergence of the gold-leaves may be observed attendant on the first efflux of the steam; but it may be readily proved, that this effect is not due to evaporation, by substituting for the cinder a mass of red-hot iron,

which will cause a much greater disengagement of vapour, but un-attended with any signs of electric excitement. Dr Faraday has, moreover, proved, in a series of careful researches, that the evapora-tion of water is incapable of producing electricity; and that the abundant excitation of electricity which takes place in the steam electrical machine of Armstrong, is due to the friction of water, carried along with the vapour, against the escape pipe. (Exp Research, par. 2083.)

Nor can we agree with our author in his third conclusion, from which he would lead us to believe that *electric currents* have been detected in the body while in its natural state. It is true that Donne by applying the platinum plates of a galvanometer, the one to the mucous membrane of the mouth, and the other to the perspiring surface of the skin, obtained indications of the passage of electricity. But an electrician will at once perceive, that the me-tallic plates were essential to the development of the current. We cannot suppose that the elements necessary to form a voltaic combination exist in the mucous membrane, " bathed with an alka-line fluid," and the skin, " the secretions of which are generally acid." The application of the galvanometer plates, however, con-verts the whole into an active circle consisting of one kind of metal combined with fluids differing in their chemical character. Mat-teucci, again, by making the wire of a sensitive galvanometer the medium of connection between the exterior and interior surfaces of a divided muscle, observed a deflection of the needle, the amplitude of which gradually decreased with the diminution of vitality in the organ, and by arranging a kind of battery of halved limbs, having their two surfaces alternately connected, he obtained a current capable of decomposing iodide of potassium. But such purely arti-ficial arrangements can never be taken as proof " that currents of electricity are always circulating in the animal frame." A pair of copper and zinc plates plunged in an acid menstruum, are incapable of generating a current, unless united by a conductor ; in Matteucci's muscular pile, the *interior* of the muscle, charged with blood and the seat of the chemical action attendant on the nutrition of the part, represents the zinc element of the voltaic pile, the copper element being represented by the exterior or investing sarco-lemma ; it is, therefore, impossible that any electric current can circulate until the muscle is mutilated, and its internal and external parts are united by a conductor. (Matteucci's Lectures, by Pereira, p. 201.) The experiment of Matteucci merely proves that under certain conditions, the vital chemical action taking place between muscle and blood, is as capable of generating current electricity, as the action of an acid on a metal; in the words of Matteucci himself " it proves at the same time the development of electricity in the muscle, and the impossibility for the electric current to circulate in the masses of the muscle in the natural state."

Dr Bird, having proved the existence of electric currents in the

animal frame (?), proceeds to inquire what purpose they are destined to serve in the animal economy.

"The influence of electricity as an agent in exciting the function of digestion, and, indeed, enabling us in some degree to replace the *vis nervosa*, transmitted by the pneumogastric nerves, by a weak current, has been especially insisted upon by Dr Wilson Philip. This very indefatigable observer made numerous observations on this matter, and he succeeded in proving that when in a rabbit that had just partaken of a hearty meal, the par vagum was divided on both sides, the food remained in the stomach unaltered, whilst on allowing an electric current to traverse the course of the nerves to the stomach, digestion was effected. This is just what might, from what is now known of the nature of digestion, have been expected, and a very much less energetic current than that employed by Dr Philip would have been sufficient   *   *
The feeble current from a single pair of zinc and silver plates is powerful enough to furnish, in a short time, a sufficient supply of electricity to decompose some chloride of sodium or common salt, and to evolve enough hydrochloric acid for the purpose of digestion."—Pp. 53, 54.

We can scarcely believe that Dr Bird is serious in asserting that a single pair of plates applied to the stomach, is capable of evolving free hydrochloric acid in that organ, or anywhere else; or that the current from such an insignificant arrangement is capable of restoring digestion. The battery employed by Dr Philip was a trough of 45 pairs, and he insisted that no restoration of the digestive function was ever effected by him, unless the galvanic force used was strong enough to produce inflammation of the stomach. (Medico-Chirurgical Review, April 1820.) Our author admits that "objections have been started to this theory," but he does not consider it necessary to state, that by a careful repetition of Dr Philip's experiments, a Committee of the Royal Society satisfied themselves, that the application of galvanism to the pneumo-gastric, exerted no influence on the digestive function; or that Müller and Dieckdof have declared "that in many cases the state of the food in the galvanized and ungalvanized rabbits was exactly the same, and in several instances, it was in the galvanized rabbit perhaps somewhat less digested than in the other." It has been remarked by Breschet and Edwards, that the alleged renewal of the digestive process is not due to the electricity itself, but to the stimulation by it of the nerve; and that mechanical irritation applied to the vagi, is equally efficacious with the electric current in the restoration of the function, suspended, as they believe, by paralysis of the muscular fibres of the stomach. It is indeed, by no means proved, that the chemistry of the stomach is suspended by division of the vagi nerves; a number of physiologists, among whom are Müller, Dieckdof, Mayer, Breschet, Valentine, Arnold, Longet, and Reid, maintaining that the secretion of acid in the stomach continues after the operation.

In connection with the electrical theory of digestion, Dr Bird considers the following experiment of Matteucci of great importance.

" This philosopher introduced a plate of platinum into the stomach of a living rabbit, and placed another on the liver, and connected both with the galvanometer ; the needles instantly traversed an arc of 20 degrees, proving the existence of a powerful current between the liver and the stomach." ".The nerves and vessels passing into the abdomen were divided above the diaphragm, and in an instant the needle deviated to 3 degrees instead of 20 ; and on cutting off the head of the rabbit by a sudden blow, even this little deviation vanished."—P. 56.

We may add, that Matteucci verified the above results by the vivisection of numerous frogs, and has further proved that the current was not due to the acidity and alkalinity of the stomach and liver, by neutralizing the acid contents of the former with an alkali.   We are at a loss to imagine how Dr Bird can consider a current, which only produced a deflection of 20 degrees on the needles of an astatic galvanometer, a " powerful " one ; or by what process of reasoning, he has arrived at the conclusion that it was the " cause of the chemical metamorphosis of the saline ingesta, whose decomposition afforded acid to the stomach, and alkali to the liver."   In accordance with the received doctrines of the electrolysis of a saline fluid, and the polar elimination of its elements, it is necessary that the conveyance of the decomposing current through it, be made by electrodes or poles, with which the liberated acid and alkali are ·incapable of combining ; how, we would ask, are these conditions fulfilled in the stomach and liver ?   Dr Bird suggests that a positive current may pass from the solar plexus to the stomach, and a negative current to the liver, or that the organic nerves may alone supply the latter (negative), and the pneumogastric the positive current.   But he surely forgets, that the result of all experiment, has hitherto gone to prove, that the conducting power of the nerves is not greater than that of the rest of the soft tissues, and that in the memoir from which he has extracted the experiment of Matteucci, that philosopher has declared his inability to detect the passage of current in the pneumogastric nerve.   We have no evidence, in fact, of the existence of currents in the nerves or any other tissues of the body when in their integral state, and when taking into consideration those observed in the artificial arrangements, and by the delicate electro-metric instruments of Matteucci, we must not forget that their absolute quantity is so small, that it cannot be estimated.

The third lecture commences with a hypothesis as to the electrical source of animal heat.   It has, until lately, been held by physiologists, on the authority of certain experiments by Dulong and Despretz, that the quantity of heat generated by an animal is greater than can be accounted for by the amount of oxygen consumed in the act of respiration.   It has also been shown by Mr Joule, whose name our author has omitted to mention, that the heat generated in the voltaic circle, is proportionate to the resistance offered to the passage of the current, and not to the quantity of zinc oxidised : from which Dr Bird thinks it probable, " that the

amount of animal heat generated in the body, plus that which can be accounted for by the combustion theory, is really excited by the passage of electric currents, whose existence we know to be positively made out in the different tissues of the body." Unfortunately, however, for the hypothesis of Dr Bird, subsequent experiments of M. Dulong, confirmed by Fabre and Silbermann, have shown, that instead of an excess of heat over that which can be accounted for by the combination of hydrogen and carbon, there is a deficiency. (Matteucci's Lectures by Pereira, p. 156.) Dr Bird next takes into consideration the connection between electricity, magnetism, and the *vis nervosa*, and after illustrating the reciprocal inductive action of electricity and magnetism on each other, offers the following suggestions :—

"May not one of the uses of electricity so freely developed in the body, especially that existing in the muscles, be to excite in the nervous cords the *vis nervosa*, just as currents, if passing near a bar of iron at right angles to its axis, excite magnetism ? May not this *vis nervosa*, or nervous polarity, excite the contraction of a muscle without actual contact with its fibres (for we know that the fibrillæ of nerves lie upon, but do not communicate with, the ultimate fibres of muscle), just as the invisible lines of force emanating from the bars of a magnet act upon the suspended bundles of wire or iron filings ? Lastly, may not such nervous force again induce electric currents in any glandular or other organs, just as magnetism in motion will re-excite electricity ? thus accounting for what cannot be questioned, the existence of electric currents in certain organs, exclusively excited by, or depending for their existence upon, the integrity of the nervous influence of the part."—Pp. 80, 81.

Our author regards the phenomena of the "induced contractions" of Matteucci as corroborative of his hypothesis.

"This philosopher allows the nerve of his frog-galvanoscope to lie across the naked muscles of a frog's thigh : on passing a feeble current of electricity through the latter, convulsions occur, not only where they would be looked for, in the leg traversed by the electricity, but where they would not be expected, in the leg whose nerve reposed on the electrified thigh. Now, this could not have arisen from any electricity running down the nerve to the leg; for the very same result occurs when a thin piece of mica or a layer of turpentine, both non-conducting bodies, is placed between the nerve and the thigh of the electrified frog. (Phil. Trans. 1847, p. 231.) Nay, it is by no means necessary to apply electricity at all ; for if the muscles are made to contract by irritating the spinal marrow of the frog, or even of a rabbit or dog, the claw of the galvanoscopic frog becomes convulsed."—Pp. 82, 83.

In the foregoing description of this curious phenomenon, it will be found, on reference to the Philosophical Transactions, that Dr Bird has confounded the contractions caused in the galvanoscopic leg by the passage of the shock from an electric jar through a conductor, on which its nerve is made to rest, with the true "induced contractions" which occur in the leg, only when its nerve is placed in contact with a muscle in a state of active contraction, whether from electricity or any other stimulus; in the latter case, the interposition of a plate of mica between the galvanoscopic nerve and the muscle prevents the occurrence of the "induced contractions," while, in the former case, its interposition between the nerve and the conductor does not destroy the inductive effect of the dis-

charge of the jar. In both cases the contractions are induced, but, in the first case, they are the effect of electric induction, while, in the second, they are the result of what Matteucci has termed "muscular induction."

With regard to Dr Bird's observation that the fibrillæ of nerves lie upon, but do not communicate with, the ultimate fibres of muscle, it must be remarked, that Wagner has shown that, in the muscles of the frog, the nerve-fibres divide into small branches, which, after appearing to perforate the sarco-lemmo of the muscular fibre, break up into still finer filaments, which lose themselves amongst ultimate fibrillæ of the muscle.

Our author, after noticing the phenomena of dia-magnetism recently discovered by Faraday, proceeds to examine the influence of artificially excited currents on organised structures, and describes the effects produced by the *direct* and *inverse* currents on the nerves, which we have already laid before our readers in our notice of the lectures of M. Matteucci. With regard to the effect of the electric current on the muscular tissue, Dr Bird remarks :—

" It must not be forgotten that mere muscular tissue is susceptible to the stimulus of electricity, quite independently of its passage through the nerves supplying the structure. Hence, when an electric current is transmitted through a limb, transversely to the direction of the nervous supply, contract-tions will occur from the direct influence of the current on the muscular tissue. It appears, however, that a more energetic current is required to exert this direct influence, than when it is allowed to reach the muscles in the presumed course of the *vis nervosa*, or, in other words, in the direction of the nervous ramification.   *   *   *   *   *

" I have already stated that an electric current of sufficient tension may ex-cite contractions in a limb, either by its passing in the course of the nervous ramifications to the muscular tissue, or by acting directly upon this, indepen-dently of being conducted by the nerve structure. Professor Marianini, who has particularly drawn attention to this circumstance, has termed the shock or contractions produced by the discharge of an electric jar, or the passage of a voltaic current through the muscular structures independently of the nerves, the *idiopathic shock ;* whilst he has applied the term of *sympathetic shock* to the influence on the muscles conveyed by the current traversing the nerves. Thus when an electric jar is discharged *down* the arm, both these shocks are produced ; whereas, when discharged *up* the arm, that is, in a direction opposed to the direction of the nervous ramifications, the idiopathic shock is alone felt. In the former case the sensation experienced according to these views is twice intense as in the latter. Hence, if with the right hand a person touches the out-side or negative coating of a charged jar, and with the left touches the knob or positive surface, he ought to experience a much more intense sensation in the right arm than in the left : for in the former the positive electricity runs down the arm and produces both the idiopathic and sympathetic shock, whilst in the latter the idiopathic shock is alone experienced. It is very difficult to ac-curately test the truth of these views, although it must be confessed that theory is much in their favour."—Pp. 94-97.

M. Matteucci states that when the electric current acts on a muscular mass deprived of its visible nervous filaments, it excites contractions therein, both when the circuit is closed and when it is opened, whatever may be the direction of the current through the

muscles. We ourselves have frequently endeavoured to guess the direction of the current when passing shocks through the arms and chest from the Leyden jar, the galvanic battery, and the electro-magnetic machine, but we could never observe that any considerable difference was produced in the contraction or sensation by changing the direction of the current through the limb.

We now turn to the more practical part of the work, which commences with an account of apparatus for the application of medical electricity—the frictional electrical machine—the Cruikshank's trough, and the electro-magnetic machine. After explaining the theory of dynamic induction, and the construction of the electro-magnetic machine, Dr Bird remarks :—

"If you reflect for a moment on the principles on which the construction of these very convenient arrangements is founded, you will at once see that you cannot obtain, by the aid of either of these machines, a series of positive and negative currents in a definite direction ; that neither of the conducting-wires is capable of being regarded as negative and positive. This you can readily understand from the results of the experiment I showed you just now with the galvanometer. Each of the conducting-wires of this instrument conveys, alternately, currents in opposite directions. The wires, at the rate the bar is now vibrating, convey about 500 currents per minute, each being alternately negative and positive. To demonstrate the truth of this statement I have here on a glass plate a piece of paper moistened with a mixed solution of starch and iodide of potassium. I place on it the platinum extremities of the conducting-wires of the electro-magnetic apparatus ; the currents pass, electrolytic action occurs, the iodine is severed from the potassium, and being set free, stains the starched paper. On examining the paper you will find the purple stain of iodide of amidine at both points where the platinum wires touched the surface. Now, as the iodine is invariably liberated at the place where positive electricity enters the body containing it, we have proof of the accuracy of the statement I made, that positive and negative electricity were alternately evolved at both wires. On this account, however useful this apparatus is when we want the mere stimulant action, the simple shock of the electric agent ; yet it is likely to fail in certain forms of paralysis, in consequence of our not being able to transmit by its aid the positive current in the direction of the nervous ramifications."—Pp. 118, 119.

It is now nearly two years since it was demonstrated by Dr Thomas Wright to the Medico-Chirurgical Society of Edinburgh, that the physiological action of the coil was only perceptible on the interruption of contact with the battery, and, consequently, that the shocks were produced by currents flowing in the same direction. Dr Bird is correct in his statement that the needle of the galvanometer is deflected both on the completion and interruption of contact (pp. 112, 113), and that the passage of the current through a solution of iodide of potassium determines the liberation of iodine at both wires. If, however, while the conductors connected with the secondary coil are grasped in the hands, contact is made with the battery, by bringing the platinum points of the contact-breaker firmly together, it will at once be evident that the current taking place on the completion of contact is incapable of causing muscular contraction. The foregoing observations must be taken

with reference to the machines in general use, as it is possible by decreasing the length of the primary coil, and at the same time increasing the tension of the battery, to obtain an instrument from which the shock on completion is equal to that on interruption of contact.   For an explanation of these curious facts we must refer our readers to the papers of Professor Henry on induction by flat spirals, contained in the " London and Edinburgh Philosophical Magazine," which are replete with novel facts in the science of electro-dynamics.   Had Dr Bird perused those interesting memoirs, he would have been spared the unnecessary trouble of inventing his " single current electro-magnetic machine."

Our author next proceeds to give the result of his experience as to the therapeutical applications of electricity, gathered from many years' careful observation in the wards of Guy's Hospital.   From this part of the work our readers will gather much valuable advice.

Dr Bird remarks that it must not be supposed that energetic and powerful currents of electricity are required to develop appreciable results, as he has convinced himself that the feeble current from a single pair of zinc and silver plates, if made to traverse the limb " in the direction of the ramifications of the nerves," is an efficient remedy in certain forms of paralysis.   The mode of applying this simple arrangement, which he terms the " electric moxa," he describes as follows :—

" We are often anxious to produce a persistent discharge from some part of the body, in cases where an issue or seton, or discharge from the moxa or actual cautery, would be desirable.   Now the knife for the issue, the needle for the seton, and the ignited tinder or red-hot iron for the moxa, all have their terrors for timid patients, and there is often the greatest unwillingness to induce patients to use such means.   There are, therefore, considerable advantages in the use of a plan which, while it is perfectly competent to produce a copiously discharging sore, shall at the same time not excite the alarm of the most sensitive patient.   Now the effect, noticed in the case just related, points out such a means.   It was long ago observed by Humboldt, and afterwards by Grapengiessier, that when a simple galvanic arc was applied to a blistered surface, the part opposed to the most oxidisable metal was more irritated than that to which the negative plate was applied.   But neither of these philosophers have noticed the effects arising from a continued application of the plates.   As I believe this *electric moxa*, as I have termed it, is often of very great value, I may be excused giving more minute directions for forming it.   Order two small blisters, the size of a shilling, to be applied to any part of the body, one a few inches below the other : when the cuticle is thus raised by effused serum, snip it, and apply to the one from whence a permanent discharge is required a piece of zinc foil, and to the other a piece of silver ; connect them by a copper wire, and cover them with a common water dressing and oiled silk.   If the zinc plate be raised in a few hours, the surface of the skin will look white, as if rubbed over with nitrate of silver.   In forty-eight hours a decided eschar will appear, which (still keeping on the plates) will begin to separate at the edges in four or five days.   The plates may then be removed, and the surface where the silver was applied will be found to be completely healed.   A common poultice may be applied to the part, and a healthy granulating sore, with well defined edges, freely discharging pus, will be left.   During the whole of this process, if the patient complains of pain at all, it will always be referred to the silver plate, where, in fact, the blister is rapidly healing, and generally not the

slightest complaint will be made of the zinc plates, where the slough is as rapidly forming. A very interesting physiological phenomenon is observed in making an issue by these means. If the plates be applied to a limb, and on different places, contraction of the subjacent muscles will always be observed most severe when the patient is in the act of falling to sleep ; and in a few cases these sensations have been sufficiently annoying to induce the patient to untwist the wires fixed to the plate, when, by interrupting the current, these feelings ceased. But if the plates were applied to opposite sides of the body, as, when on the chest, to different sides of the mesial line, no contractions whatever occurred. This admits of explanation by a reference to the fact of the nerves not crossing the middle line of the body. My friend Dr Gull once met with a case in which the application of these plates, with the view of forming a moxa, produced intolerable distress. The patient was the subject of spinal disease, and this probably accounted for the extreme sensibility of the cutaneous nerves."—Pp. 130-132.

A very interesting statement of the results of the application of this simple apparatus will be found in the appendix, by Mr Spencer Wells, who observes that the denudation of the cuticle is not necessary to secure its action, provided the plates, moistened with vinegar, are applied to the body without the intervention of any other substance. The remarks of this gentleman, as to the application of the combined plates to various kinds of intractable ulcers possess considerable interest, and are, we think, well worthy of the attention of our surgical brethren. We may observe that we have, since 1844, occasionally applied a single pair of copper and zinc plates, moistened with a saline fluid, to the sound skin in neuralgic and rheumatic affections, in some cases with complete success ; the application of a galvanometer to the metals when in contact with the body gave marked evidence of the passage of an electric current between them, and we frequently had occasion to notice the appearance of greenish pustules under the negative plate, their colour being due, in all probability, to the mixture of their contents with chloride of copper. We must not omit to mention here, the very elegant application of the single pair devised by Dr Graham Weir of Edinburgh, which consists of the introduction into the uterus of a small bougie formed of pieces of copper and zinc soldered together. Dr Weir informs us that the use of this instrument in cases of atonic amenorrhœa has been followed by the supervention of the menstrual discharge in the course of a few hours.

In Lecture V. Dr Bird considers the effects of electricity on the contractile tissues, and especially its application to the induction of uterine contraction. From having occasionally noticed the occurrence of abortion as the result of the passage of shocks through the pelvis, in cases of amenorrhœa, he has satisfied himself that the electro-magnetic current is capable of setting up uterine contractions de novo; but he considers that, like ergot of rye and other remedies of the same class, it generally fails to do so. Yet in cases of deficient uterine action, during and after labour, and of flooding after abortion, he agrees with Drs Radford, Lever, and

others, in considering it a remedy of the utmost importance, and cites a number of cases in which it has succeeded after the failure of all other measures. Dr Simpson, as our readers know, has expressed his opinion as to the inefficiency of the electric current in such cases, but our author thinks that his failures were owing either to the employment of an improper form of the electro-magnetic machine, or to the application of the current in the wrong direction; and remarks :—

" I confess I cannot for one moment admit the validity of his opinion, when opposed by the facts of Dr Radford, Dr Lever, and others ; but would endeavour to show the mode in which these opposite statements appear to admit of reconciliation. This is founded on the opposite effect of currents, according as they follow the course of the centripetal or centrifugal nerves. Now in the magneto-electric coil, in which currents are excited by repeatedly breaking contact by a vibrating bar, the apparatus, whose construction I explained at my last lecture, we have, as I have already shown, two currents moving in opposite directions, to each of which the patient who is the subject of experiment becomes submitted. Now these currents are of unequal strength, and if the most energetic, that on breaking contact, be passed in the direction of the *vis nervosa*, it will produce painful contractions, which, the moment it passes in the opposite direction, will become relaxed. For, as I have proved to you, an inverse current tends to produce paralysis, and a direct current contraction. Hence I should urge the accoucheur not to employ the apparatus in which both these currents traverse the patient, but simply the one I have described to you, as the single current machine.   *   *   *   *   *
In using this, I would suggest the positive conductor to be placed over the lumbo-sacral region, and the other be carried only over the abdominal surface with a gentle friction. In this way powerful uterine contractions will be easily excited."—Pp. 144, 145.

Without expressing an opinion as to the value of the numerous experiments of Dr Simpson, which were made with the utmost caution and impartiality, and by the the aid of an instrument and apparatus exactly similar to that employed by Dr Radford, we must remark, that there is no evidence on which we can ground the supposition, that the contractions produced by the passage of electricity through a muscle are influenced by the direction of the current. It is true, that when the sciatic, a nerve of mixed function, is carefully insulated from the muscles of the thigh—when the muscles are in the last stage of excitability—and the electricity applied to *the nerve* of the lowest tension—contractions occur only on the transmission of the current in the supposed direction of the *vis nervosa*, but when, as Matteucci and Longet have shown, the nerve is purely motor, or when the mixed nerve has had its sensory function suspended by etherisation, the limb contracts on the passage of the current in the opposite direction. The passage of the inverse current, instead of tending to " produce paralysis," has the contrary effect of exalting the excitability of the nerve, although it relaxes the contraction of a muscle already in a state of tetanic spasm. The powerful interrupted currents from the electro-magnetic machine exhaust the energy of the nerve, in whatever direction they pass through it ; these currents, moreover, when traversing the involun-

tary muscular tissue of the heart or intestinal canal, cause strong contractions without reference to their direction. The effect of the *direction* of the current through the ganglionic nerves has, so far as we can remember, not been studied. We have already stated, that for all practical purposes the common electro-magnetic machine is a "single current machine;" and we may add, that we doubt whether Dr Bird's single current machine is an efficient one. We think it impossible that shocks can be obtained from it with sufficient rapidity, without the addition of a multiplying wheel to the cylinder bearing the contact-breaker.

Dr Bird next proceeds to give the results of his treatment in various forms of paralysis :—

"Paralysis," he remarks, "is so general a term, indicating so vast a variety of pathological conditions, that no opinion whatever can be given of the utility of the agent in question, without being more precise in our definitions. One general remark, however, I may venture to make, that under no *circumstances whatever, have I ever seen any of the modifications of electricity of use in the treatment of paralysis attended with permanent contractions,*—a condition so frequently observed in the upper extremities. Indeed, so far from sanctioning the use of electricity in any of its forms in such cases, I feel convinced that it may even do mischief, and hence on no account ever venture to employ it. As a general rule, I would especially guard the practitioner against using this remedy in any form of paralysis, where a source of permanent irritation exists in the brain or spine."—Pp. 149, 150.

We agree with our author in believing that no *permanent* benefit can be effected by the application of electricity when disease is still active in the nervous centres. We have, however, more than once had occasion to observe, in cases of chronic inflammation of the membranes of the spinal chord, that the long-continued passage of gentle electro-magnetic currents, has put a stop to the involuntary jactitation frequently attendant on that disease. Dr Bird makes the following practical division of the various forms of palsy : 1. Cases of paralysis from the poison of lead. 2. Cases of rheumatic paralysis. 3. Cases of paralysis limited to the portio dura. 4. Cases of paralysis following local injury to a limb. 5. Cases of hysterical paralysis. 6. Cases of anæmic paralysis. 7. Cases of paralysis dependent on persistent cerebro-spinal lesion. 8. Cases of local anæsthesia.

In paralysis from lead, five cases were cured, four improved, and two not relieved. In this variety of the disease Dr Bird has found that the application of frictional electricity, in the form of sparks drawn from the spine, is the most satisfactory mode of treatment.

In rheumatic paralysis, under which head our author includes all cases of palsy following the sudden application of cold, five cases were cured, three relieved, and two unrelieved, under the application of shocks from the electro-magnetic machine.

In paralysis of the portio dura, the treatment by shocks from the Leyden jar, by sparks from the parts affected, and by the electro-magnetic current, were equally efficacious.

In paralysis from local injury, when resulting from pressure or concussion of the nerves, and unattended by lesion of their fibres, Dr Bird recommends the use of his single-current machine.

In the hysterical form of paralysis, and that arising from *anæmia or exhaustion,* the exhibition of electricity in the form of the electromagnetic current was attended with success.

As to paralysis attending *partial organic lesion of the cerebral or spinal centres,* our author remarks, that the exhibition of electricity frequently does mischief, especially when rigidity of the arteries is known to exist, or where ramollisment of the brain is present. In those cases, however, in which the palsy continues after the exciting cause has been removed, he considers the passage of the electro-magnetic current, in the course of the nervous ramifications, an invaluable remedy. He has also succeeded in curing cases of *local* anæsthesia by the electro-magnetic current passed from the spine to the affected part.

In the treatment of *chorea,* Dr Bird has been equally fortunate; out of thirty-seven cases of this disease, thirty were completely cured, five relieved, one refused treatment, and one was uncured. In this affection the treatment consisted of sparks drawn from the spine and muscles affected. The passage of shocks through the parts was found to have the effect of aggravating the symptoms. In our own practice we have found the gentle application of the electro-magnetic current efficacious in the treatment of chorea.

On the use of electricity in amenorrhœa, our author makes the following remarks :—

" In electricity we possess the only really direct emmenagogue with which the experience of our profession has furnished us : I do not think I have ever known it fail to excite menstruation where the uterus was capable of performing this function. Disappointment will, however, most certainly result if we have recourse to electricity merely because a girl does not menstruate; and we must never lose sight of the fact, that, after all, the large majority of cases of amenorrhœa depend upon an anæmic condition ; and the patient does not menstruate, simply because she has no blood to spare. Nothing can be more ridiculous than applying electricity or any other local stimulant to the uterus when chlorosis exists: the first great indication will be to restore general health, give iron to make up for the previous deficiency of that element in the blood, and then, and not before, think of stimulating the uterus. It is true that, in a large proportion of cases, the catamenia will appear as soon as the chlorosis is cured : of course, in such cases, there will be no need of the employment of electricity ; but still a large number will occur, in which, even after the complete relief of the chlorotic and anæmic condition, the uterus remains torpid and refuses to act. In such cases, a few shocks transmitted through the pelvis seldom, if ever, fail in effecting menstruation. I have repeatedly known the catamenia, although previously absent for months, appear almost immediately after the use of electricity ; in more than one case the discharge actually appeared within a few minutes. The mode in which electricity has been generally employed has been by transmitting a dozen shocks from an electric jar, holding about a pint, through the pelvis ; one director being placed over the lumbo-sacral region, the other just above the pubes."—Pp. 184-186.

Dr Bird does not appear to have had any experience in the ap-

plication of electricity by electro-puncture, which is undoubtedly a very effective remedy in neuralgic affection. Nor does he mention the operation successfully performed by Petrequin for the cure of aneurism, which consists of the passage of the current from a galvanic battery through the aneurismal sac, with the view of coagulating the serum of the blood contained in it. There are, indeed, a number of applications of electricity to medical purposes which he has omitted to describe. On the whole, we think, that the reprint of these lectures would have been more useful to the profession, had its author given a more extended survey of the labours of other writers, who have directed their attention to this branch of therapeutics, instead of, in a great measure, confining himself to the results of his own experience, the greater part of which has already been laid before the public in the Guy's Hospital Reports. As it is, we cannot say that we consider the work as giving a complete view of the science of electricity, whether in its relation to physiology or therapeutics.

Sanitary Economics; or Our Medical Charities as they are, and as they ought to be. By ALEXANDER P. STEWART, M.D., Physician to the St Pancras Royal General Dispensary. London. 1849.

DR STEWART'S pamphlet is directed against certain abuses which have crept into the system pursued at the public dispensaries of London; and his remarks are not without their application to similar institutions in this part of the kingdom. He contends, that medical charities, in the present state of society, will be productive of unmixed good, only if the three following postulates be granted:—
" 1. That gratuitous relief be given only to those who are so poor as to be absolutely unable to pay anything, either for advice or medicine. 2. That medicine be dispensed to none but those who love it for its own sake, or are really sick; and, 3. That the medicines dispensed be taken by the patients."—P. 7.

Now, as regards the first of these postulates, it is notorious that many do apply at dispensaries for advice and medicines, whose circumstances should enable them to pay for both; and we can conceive no means so likely to discourage this practice, as to require the production of a certificate of poverty *from all suspicious cases* before admitting them to the benefits of charitable institutions. Dr Stewart also exposes the shabby practice of certain masters, who, having become governors of dispensaries in virtue of a small annual payment or life-subscription, send their servants to these institutions for advice and medicine, whenever they have occasion for it, thereby claiming as a right, what, in honour and equity, if not in law, they ought to pay for. These gentlemen do not consider, or are callous to the consideration, that dispensaries are instruments

of charity; that their medical officers receive no remuneration for their labours, and have a right to expect that the governors will not inflict upon them unnecessary trouble *in the name of charity.* Here, however, the remedy is simple, and rests with the medical practitioner. Let him but act independently, systematically refusing to prescribe at the dispensary for the governor's servants, and the nuisance will be speedily abated. The just fear of public exposure will prevent all risk of subsequent dispute between the parties.

We very much fear that postulates 2 and 3 cannot be granted; and that, notwithstanding every circumspection on the part of those who are called upon to treat the diseases of the poor, cases of imposture of the most flagitious character will frequently elude detection. The doctor's line for medicine is too often obtained to be used solely as a begging petition, while his physic is " thrown to the dogs ; " yet no statutory penalties seem to visit the individuals who thus profane our mysteries. Nor upon reflection can we clearly see any course by which the physician can guard himself against the frequent repetition of such imposition, unless it be by exercising the utmost vigilance in ascertaining, *first,* the true nature of the complaint for which he is requested to prescribe; and, *secondly,* when his suspicions are awakened, by skilfully cross-examining the patient as to the effect of remedies which he is supposed to have used. We have no confidence in the efficacy of self-supporting dispensaries, nor of any measure which the collective wisdom of legislators, or of medical men, can devise for preventing imposture. Human judgment is weak, and the disposition to deceive is inherent in depraved human nature. The dispensary medical officer ought to be of a happy temper, and capable of consoling himself upon occasion, with the reflection of Hudibras :—

> " Doubtless the pleasure is as great,
> Of being cheated as to cheat."

Still, were it only for the sake of his first postulate, which he has handled boldly, yet temperately, we can recommend Dr Stewart's pamphlet to the perusal of those connected with public medical charities.

Contributions to Mental Pathology, &c., &c. By JAMES GEORGE DAVEY, M.D. London, 1850.

DR DAVEY's contributions to mental pathology consist of the reports of the Lunatic Asylum under his charge, presented to the Ceylon government. These are preceded by an introduction, describing the state of the insane in that island previous to his arrival, and the obstacles he encountered in providing for its amelioration,—difficulties which would have damped the energies of

a person less determined than Dr Davey. We are apt to associate the name of Ceylon with fragrant spicy gales, cinnamon, and pearls; Dr Davey seems rather to have found it a bed of thorns, than of roses. In fact, we fear that he must have been inclined to exclaim with old Knox, " this would be the most delightful island in the world, were it not infested with devils."

Dr Davey was evidently placed in a false position, partly in consequence of the misapprehension of the authorities as to the nature of his appointment, and more especially from the jealousy and opposition of those who should rather have aided his efforts.

We will not harrow the feelings of our readers by describing the condition of the insane before Dr Davey's arrival. Suffice it to say, that they were confined with lepers, in a building of which the committee reported, " that the roof is absolutely dangerous, that there was little ventilation, that the drains were choked with ordure, that bats were continually flying, and their excrement added considerably to the stench." " Never can I forget," says Dr Davey, " the impression made on my mind on first visiting the lunatics confined in the Leper Hospital. Such misery, such squalor, such neglect, I had never seen before. In this state of things, of course there could be no cures. The matter was at last, in 1843, formally brought before the Legislative Council, who, on the recommendation of a committee, applied to the Home Government for the appointment of a person trained in one of the well-conducted asylums of the United Kingdom. Lord Stanley, highly to his credit, appointed Dr Davey, at that time resident medical officer at Hanwell, and well known as a successful cultivator of psychological science, with a salary of £500 per annum, subsequently increased to £800. On his arrival in December 1844, difficulties in his position immediately presented themselves. The Ceylon government evidently expected a *keeper* and not a medical man, while Dr Davey was entirely unacquainted with the usual proceedings of colonial governors, colonial secretaries, and inspectors of hospitals. Many impediments were thrown in his way, and we should hesitate to designate the treatment he received in the terms which we think it deserves. His position was evidently not an enviable one, and it was not till three years after his arrival that he succeeded in effecting a patched up amelioration of the condition of the insane. Enough of this. The reports are three in number, and highly interesting and worthy of perusal, though not containing anything absolutely new to those acquainted with the modern treatment of insanity. Dr Davey, we may mention, appears to be a zealous phrenologist, and has carried to the full extent the benevolent views of Drs Conolly, Brown, and others, as to non-restraint, employment, &c. The reports, as we have said, are highly creditable to Dr Davey, who has discharged the duties of a painful situation with the greatest zeal and energy. In 1849, in consequence of the state of the funds of the island, it was an-

nounced to Dr Davey that his services would be dispensed with. We cannot end better than by quoting his own words.

"I found the insane in Ceylon, in 1844, in neglect and wretchedness, the companions of debtors and criminals, and of the leprous, blind and maimed."— "I leave them, in 1849, the occupants of a well-built, airy, and commodious building, wherein every available care, attention, and forethought are employed for their relief and cure."

Surgical Anatomy of the Arteries, and Descriptive Anatomy of the Heart. By the late VALENTINE FLOOD, M.D. New Edition by JOHN HATCH POWER, M.D. Dublin, 1850.

DR FLOOD's useful little work has, by the care of its present Editor, received some additions which should render it peculiarly acceptable to the student. The descriptions of the situation, course, and distribution of vessels, even when all possible brevity is studied, are apt to weary most readers, or speedily to escape their memory. Dr Power has, we think, acted most judiciously in interspersing the purely descriptive part of the work with physiological and practical observations, which, if studied in connection with the anatomical details, are, by association, instrumental in conveying a lasting impression of what the surgical anatomist wishes to teach. Another, and no small merit, which the work possesses is, that it is written in good readable English, which there is no excuse for misunderstanding, and which we should be glad to see imitated in treatises of higher pretensions. A few woodcuts are introduced to illustrate certain important descriptions, *e. g.,* the distribution of blood in the liver, the varieties in the origin and course of the obturator artery, &c. In a small volume intended to be moderate in price, and used chiefly in the dissecting-room, a more liberal use of the engraver's art would have been inadmissible or superfluous.

Part Third.

CLINICAL REPORTS, LECTURES, ETC.

CLINICAL MEDICINE.—PROFESSOR CHRISTISON.

ON THE DISTRIBUTION OF FEVER PATIENTS IN AN HOSPITAL.

Friday, 8th February 1850.

On lately resuming my duty as Clinical Professor, I find that cases of continued fever, of which it has been customary to admit four into each clinical ward, have been for some weeks excluded. And I understand the reason for

this was, that, not long after the commencement of the present session, fever appeared to spread with unusual virulence, both among the general patients in the ward, and among the students who frequented them; so that my colleague, then on duty, judged it prudent to suspend the admission of any more fever cases for a time. This was an imperative precaution in the circumstances. But, since the want of opportunities of instruction, as to the features and treatment of a disease of such importance and frequency as fever, would be a serious defect in a course of clinical medicine, I propose now to re-admit some cases into the wards, in the confident hope that we shall not again encounter the same serious casualty. Before doing so, however, it is right for me to satisfy you as to the grounds for this procedure, so that you may feel the same confidence which I entertain, and make use without fear of the opportunities of observation which will be presented to you.

I am induced to bring this matter before you all the more, that the statements I have to submit relate to a very important practical question,—which still gives occasion to a great difference of opinion and practice in this country, —and one in regard to which I happened not long ago to enjoy, as physician in this Infirmary, peculiar opportunities of observation and inquiry. The question I allude to is the proper mode of distributing fever patients in an hospital.

Ought fever patients to be accumulated in express fever hospitals and fever wards ? or ought they to be distributed among the other patients of the general wards in a general hospital ? Which of these modes of distribution is the better for themselves, for their attendants, medical and personal, for the other hospital patients, and for the fever patients' friends? These are serious questions; and they are far from being superfluous even in the present day. There are indeed very few purely practical questions, upon which the minds of practitioners of intelligence and experience are so much divided. For while, in the hospitals of England, it is the custom, with few exceptions, to mingle fever cases with the general run of patients ; in Scotland and Ireland, on the contrary, it has long been an almost equally general rule, that persons afflicted with fever are admitted only into express fever wards, or into distinct fever hospitals. Until scarcely a twelvemonth ago, the Edinburgh Infirmary was the only hospital in Scotland in which the mixed system had been adopted ; even here that mode of distribution was introduced only in 1842; and the example of Edinburgh has been hitherto followed in no other hospital, except that of Dundee, in which the mixed system was sanctioned on a recent occasion, but has not yet been carried into effect.

In entering upon this inquiry, it will be the simplest course for me to give you, in the first instance, a brief sketch of the statistical facts relative to the little epidemic which broke out in these wards about two months ago. My colleague, under whose observation this incident occurred, did not find a fit opportunity for laying the history of it before you. I shall therefore supply the information, as it has been collected for me by those of your number who acted as clerks at the time. I have before me a complete tabular view of all the cases which have occurred ; but it will be much more intelligible, if I simply lay before you the following summary :—

On the 7th and 18th November, two fever cases were admitted into the male ward, and put into Nos. 2 and 16, two of the beds appropriated to fevers (see plan II. at page 270). On the 31st October, one case was admitted into bed 16 in the female ward. These were all the cases received prior to the spread of the disease in the wards. The last was a case of mild typhus, with a doubtful eruption ; and the first two were severe eruptive typhus,—not, however, fatal. The female left the hospital in the end of November ; the two men not till the close of December. From these patients ten persons would appear to have caught fever in the course of eighteen days. Three of the cases occurred among yourselves ; the rest were patients in the wards, affected with general diseases.

Of the seven patients, five were males and two females. These were all attacked between November 25 and December 5, or within ten days of one another. All were cases of eruptive typhus, and two of them proved fatal. One of them had been in the hospital for twenty-six days before seizure, another six weeks, and the rest even longer. Three had left the hospital before seizure,—viz. on the fourth, seventh, and ninth day before being taken ill; but none of them, it appears, had, subsequently to being discharged, seen any person labouring under fever. If you remember what has been usually held as to the period of incubation of fever-infection, you will see it is highly probable that none of these seven persons had been exposed to infection except in the wards of the hospital. That period is supposed to vary, in a very large proportion of cases, between fourteen days and six weeks. It is true that we cannot attach implicit faith to this doctrine on a question so very difficult to be solved. As little can we trust implicitly to the information, that the three persons, who were attacked after leaving the wards, did not subsequently see any one labouring under fever; because persons in their station of life are too careless in their habits of observation to be entitled to much credit in an inquiry to prove a negative. But we have made all the inquiry which could be made. And upon the whole, I think it is fairly proved that the whole seven caught the disease in the hospital, if they got it through infection at all.

In regard to those of your own number who have been attacked, there can be no doubt. Two were clinical students, and the third was also a clinical clerk. All were seized between the 1st and 12th of December. All had characteristic eruptive typhus—two severely, one dangerously. It is a great gratification to me that all recovered, especially as two were under my own care. None of the three were in communication with fever patients anywhere but in the clinical wards of the hospital. A fourth student was also attacked on the 25th of December; but as he came very little in contact with the fevers in the wards, and on the other hand visited fever patients at their own homes as a Dispensary pupil,—a far more dangerous exposure,—we cannot count him along with the others.

Here, then, was an unequivocal instance of fever spreading in general wards, both among patients and among the healthy who frequented the wards. As you will presently find that no such occurrence has taken place in these wards for seven years at least, under circumstances apparently the same, it becomes a very interesting question, what has been the cause of so unlooked-for an incident? On considering the matter attentively, I can imagine only three explanations: first, that fever at the time was most peculiarly virulent; or, secondly, that the necessary precautions had been neglected; or, thirdly, that the practice of mingling fevers with other cases is radically faulty. And I need scarcely add, that if the last be the true explanation, the mixed system of distribution must be abandoned.

The first of these modes of explaining this little epidemic is the most tempting, because it is the most simple. But if we are to hold a peculiar virulence of fever to be the true cause, then we must farther restrict ourselves to the narrower view, that it was merely a peculiar virulence of infectiousness, so to speak, which characterised the disease, and not any peculiar virulence in the form of the disease itself. Fever for some time past can scarcely be said to have been epidemic in Edinburgh. [The weekly returns for six weeks, after the 10th of November last, show that there were only 30, 31, 39, 39, 38, and 40 fevers in the whole Infirmary,—a paucity of numbers unprecedented for some years.][1] Then, the disease has not assumed by any means a malignant character of late. Nor were the cases which constituted the epidemic of our wards in general formidable. It is true, indeed, that two of the whole thirteen

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[1] The few passages within brackets have been introduced for fuller illustration, since the lecture was delivered.

died. But in both of these the circumstances were peculiarly unfavourable, the health having been broken by protracted chronic pleurisy in one instance, and in the other by tedious pseudo-syphilis attended with an eruption of rupia,—a never-failing indication of a deep inroad upon the constitution. We are limited therefore to the theory, that a fever, not in itself virulent, may present a peculiar intensity of infectiousness. I am not aware, however, of any evidence existing in favour of such a theory in regard to typhus. And at all events it stands to reason, that throughout the previous seven years, during which fever has been twice epidemic, and repeatedly most malignant in its own character, it must have several times put on an unusual tendency to spread; and, nevertheless, you will find by-and-bye that it has never spread before to any extent in these wards. The first explanation, then, is far from being satisfactory.

The second view is, that there may have been a neglect of the due precautions which should be taken, when fevers are mingled with the general patients of an ordinary fever. In point of fact I find there has been neglect. For, first, as concerns the patients, it appears that the printed regulations of the hospital have been for some time past entirely disregarded. I hold in my hand a copy of the regulations adopted in 1843 by the managers, at the recommendation of the medical officers of the Infirmary, not long after the mixed system of distribution was carried into effect in the general wards. The most important of these rules are, that all fever patients shall, if possible, be washed in the bath before being carried into the wards;—that their clothes shall be removed to a garret, and there fumigated and cleansed, and not restored till the patient's recovery;—that the nurses shall prevent the other patients from having unnecessary intercourse with those labouring under fever;—that convalescents from fever shall keep to one fire-place, and the rest of the patients to the other;—that the number of fevers shall never exceed four, distributed as shown in the plan No. II.;—and that the mattresses and bed-clothes used for fever patients shall be stamped with the word Fever, and never used for any but the four specified fever beds. Now, at the time the disease spread in our wards, almost all those rules were disregarded, except that which limits the number of fever beds. For at least several weeks before, the number of fevers did not exceed two in the male ward, and one in the other; which only adds to the presumption, that there must have been some very unusual circumstance causing the disease to spread so vehemently as it did. But the rules regarding separation of the patients and their bedding were not observed at all; and in the female ward the patients' clothes were kept in the ward like those of the general patients; while, in the other, they were merely removed to a closet in the adjoining lobby, but not purified. At this distance of time, it is out of the question to think of ascertaining in detail which of the specific regulations have been violated in each particular case. But the habitual disregard of them all evidently affords a rational explanation of the spread of the disease in the wards; [and the presumption in its favour is all the stronger, that a practice existed in the wards of substituting a different coverlet on all the beds during the period of the visit, so that there were two chances every day of a general patient having a fever coverlet put over him.] Unless we could trace a positive and efficient violation of some important regulation in each particular case of fever commencing in the wards, I would not go so far as to say, that we have here positively found the true cause of our epidemic. But it seems to me that we have come very near the cause, especially if it can be proved that every other possible explanation in such a conjuncture is here inapplicable. And it is of some consequence for me to observe, that the regulations in question were adopted on account of an occurrence somewhat similar to what has lately happened. When the mixed distribution of fever patients was first carried into effect in October 1842, there were no such regulations. But as, during the next three months, the new arrangement was found not to work well,—more fevers having occurred among the patients in the general

wards than was agreeable,—these regulations were added in January 1843,—you will presently see with what result.

I must here guard myself against being supposed to attach blame in any quarter for the regulations having fallen into abeyance. During the last eighteen months the practice of receiving fevers in the clinical wards was twice dropped for about three months; and during that period the nurses in the wards were changed, and a new professor came upon duty. Neither the professor nor the nurses had been aware of the existence of such regulations, until a copy was discovered the other day in an obscure corner of the nurses' room, where it seems to have been put aside during the annual white-washing of the ward.

As to the students who have been attacked, the neglect of due precautions will account very easily for the illness of two of them. For they were in the habit of stethoscopising fever patients in the wards,—than which no sort of exposure can be conceived more likely to communicate the infection. So great do I consider the danger,—for in what other way can any one be so effectually exposed to inhale in close proximity the pent-up effluvia of a fever patient's body ?—that I always make a point of advising the clinical students, and even the clerks, to abstain from the use of the stethoscope in cases of fever. You have ample opportunities of learning the use of the instrument in other cases. And as for the patients themselves, I am convinced from long experience, that there is not one case in twenty of our fever, in which a stethoscopic examination is necessary for any useful practical purpose; and in these it is best to leave the examination to practised hands, by whom it can be made so rapidly as to be comparatively free from danger. In the instance of the third student, no violation of due precaution can be traced. In him the communication of infection can, therefore, be ascribed only to an unusual susceptibility, or to unconscious exposure, arising from the hospital regulations in regard to bedding, clothes, &c., having been disregarded.

There still remains a third mode of accounting for the epidemic of fever in the wards. If an adequate explanation is not to be found in a peculiar intensity of infection, or in a neglect of due precaution, there is nothing left for it, I apprehend, but the conclusion, that the mixed distribution of fevers in general wards is radically faulty, and must be abandoned. I believe, however, that the following sketch of the history of infection in the clinical wards and the Infirmary at large, will fully satisfy you, that we cannot look in that direction for a rational explanation of our epidemic.

The safety of distributing fever patients in a general ward, and the advantage of that method over the accumulation of them in express fever wards, may be deduced from the two following most remarkable facts :—In the first place, it has been found during the thirty-two years of my observation of fever in Edinburgh, since I first became a resident clerk in this Infirmary, that in fever wards all the attendants catch the disease sooner or later—the nurses, clerks, dressers, and physicians; and, when there has been a fever hospital, that also the matron, apothecary, domestic servants, shopmen, porters, and even the gate-keepers do not escape. Many of these die; for in such circumstances fever is almost always violent. The mortality has been especially great at various periods among the clerks; and in the interval alluded to, four physicians have perished,—two of whom, cut off in the very flower of their age, were men of so great promise, that their untimely death is even still deplored as a public calamity. These are fearful evils; lamentable in any circumstances; painfully so if they could have been avoided ;—and it is now clear that they were far from inevitable. For a detail of most of these facts, which for brevity's sake I must here state succinctly, I beg to refer to the article on fever which I wrote for Dr Tweedie's " Cyclopædia of Practical Medicine."

But, secondly, in private houses, where only a single fever patient is treated in a room, the infection is almost never communicated. This is a startling proposition, considering the horror universally entertained by unprofessional people of the infectiousness of fever ; nevertheless it is undeniably true. I

have repeatedly stated, but the statement cannot be too often made known, that I have not in a single instance known our hospital fever spread in a private house. During the last thirty-two years I must have attended, either as principal or assistant, not less than 80, more probably 100, young medical men and medical students, who had caught fever in the Infirmary and Fever Hospital, and who lay ill in their lodging-houses, or at their own homes. In not one instance was the disease communicated to the attendants. There can be no room for error here. The disease was caught by infection : it was most undoubtedly the same fever : no one could have caught it in these houses without my infallibly learning the fact. Yet no such instance ever came to my knowledge. On referring to my late colleague, Dr Graham, whose opportunities of observation, however, were not so numerous as my own, I found that his experience was precisely the same. On referring also to Dr Alison, whose opportunities, again, have been even greater than mine, I got very nearly the same information ; for he had met with only one instance of infection communicated by a student to his companion who attended him in his lodgings. I am sure I am within the due limit when I say, that we three have attended 280 cases of this kind ; that 1200 persons must have been more or less exposed in attending on them; and that only one instance of communication is known to have occurred.

We have thus, then, two opposite propositions established beyond the reach of cavil. Fevers, at a certain degree of concentration, are almost infallibly communicated ; but at a certain degree of extension, communication is almost unknown. And it does not signify what the description of hospital fever may be ; for our experience includes equally the inflammatory or relapsing fever, simple typhus, and eruptive typhus. It follows that fever may be safely mingled with other cases in an hospital, if a due proportion be observed between them. And if we can hit upon that proportion, it will equally follow that such a mode of distribution must be attended with vast advantage to the attendants of those ill of fever, whether medical or personal.

The practicability of mingling fevers safely with general cases had been long previously proved on a small scale in the Royal Infirmary. For when the University clinical department occupied, before 1825, only the two small wards in the north wings of the hospital, a few fevers were treated in each ward without injury to the other patients. The disposition of the beds was according to the subjoined plan, which is drawn pretty closely to measurement. Each
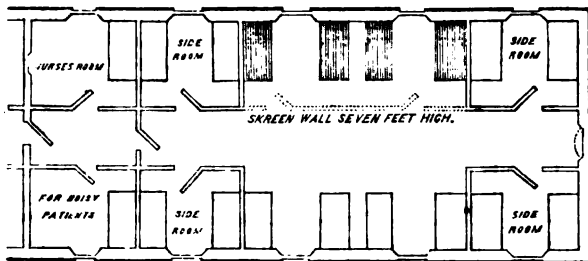
I. Clinical Ward, 1817.   60 feet by 24.

ward is 60 feet long, 24 feet broad, and 10½ feet high. There were at that time four close side-rooms. The four shaded beds were assigned to fevers ; and the space around them was partially isolated. by a screen-partition seven feet high, with a door at each end. So long as the cases of fever did not exceed what could be accommodated in these beds, the disease was very seldom communicated. But when fever first attracted attention in Edinburgh, in its epidemic form, in the years 1817, 1818, 1819, and 1820, the cases were allowed to accumulate till they amounted to one-half of the whole patients

and upwards. And then it was observed that the disease spread to the other patients, to the nurses, and to the clerks. [I cannot supply any precise statistical information ; but having been at the time a resident clerk in the Infirmary, I was well acquainted with the general fact ; which besides was notorious at that period.]

Influenced by these and other analogous facts, my late colleague Dr Graham, who was then a manager of the Infirmary, as well as a clinical professor, brought the question of the distribution of fever patients before the managers and medical officers of the hospital in 1842. In the course of the inquiries then made, an extensive correspondence was carried on with the hospital physicians of England, and especially of London, who had long had experience of the working of the mixed system. Their opinion was unanimously hostile to express fever wards, and favourable to the mixing of fever patients with others, provided the proportion was kept low. From this correspondence I shall select those statements which are most circumstantial.

Dr Bright of Guy's Hospital says,—" We never have any separate wards or rooms for fever. We never refuse fevers, but admit them in preference to other diseases, because they are urgent, and much can be done or left undone for their advantage. We place them in the wards in which medical and surgical cases are promiscuously admitted ; and, if we can help it, we never have the fevers within four or five beds of each other. We avoid placing them in corners into which the air cannot freely enter, and prefer placing them between two windows ; and with these precautions it is scarcely known that the disease has been communicated from one patient to the other. Many years ago I remember we were obliged to shut the clinical ward, because the fever began to spread. But there bad cases had been crowded together. Some of the students who had been studying the cases closely had the fever. This is, however, quite an exception. The other is the rule.

" I would think four or five fever cases might be safely put in a well-ventilated ward, sufficiently large to contain twenty patients well."

Dr Williams, then of University College Hospital, observes,—" At Guy's Hospital * *   it was attempted to separate the fever patients into one ward. *   *   The attempt was so distinctly followed by a spread of the disease among the nurses, pupils, and others, that the plan was abandoned. Warned by that experiment, as well as by many less conclusive facts of a similar character, it is now the general practice in our hospitals to have no fever ward, but to scatter the fever patients as widely and as far as possible asunder in the general wards. Whether as the result of this precaution or not, I can state it as a fact, which I have observed at St George's Hospital and at our own, that it is rare to find the other patients, nurses, or students, affected with the disease.   *   *

" Of late we have had but few fever cases, not more than two or three at a time in our large twenty-bed wards ; and, from what I formerly witnessed at St George's, I should be sorry to see more than four at a time in such a ward, even with better ventilation than ours. In 1835-6 a bad congestive fever prevailed in London. The cases in some of the wards were as many as one to three patients with other diseases; and then some new cases certainly did begin in the hospital, and several of the nurses were infected. This, it is true, might have resulted as much from the virulence of the epidemic as from the number of fever patients."

Dr Boyd, of St Marylebone Infirmary, remarks,—" My experience for eight years in this infirmary induces me to give a most decided preference to their distribution through the ordinary wards, as has been practised here during the last two years. Formerly there were separate wards, on the male and female side of the house, for the reception of fever patients. The quantity of cubic feet of air in these wards was 935 for each bed ; in the general wards it was 831.

" Typhus fever was very fatal in the early part of the summer of 1838.

Thirteen cases died in this infirmary within three weeks,—five of them within two days in a ward containing twelve beds. Dr Sims caught the fever at that time and died. A nurse also died of fever. Two of my colleagues, both resident here, as well as myself, have been affected with the same disease. Since the distribution of the fever patients through the general wards, none either of the medical men or attendants have caught the disease ; nor am I aware of a single instance in which it has spread to the other patients."

The most remarkable statement of the whole, however, was that of *Dr Latham*, at the time physician of St Bartholomew's Hospital. " The experience I have of fever," says he, " has been drawn entirely from an hospital in which the practice has been to distribute the patients ill of fever among the patients ill of other diseases.

" Of St Bartholomew's, where the fever cases are mixed with other cases, I had been physician thirteen years before I had any sufficient proof that the ordinary fever of London is a contagious disease. I will not say that in all this time there may not have been two or three students, or two or three nurses, who became ill of the same sort of fever which was prevalent in the house. But it was a most rare occurrence. Yet this same fever, which I was continually witnessing without proof of its contagious nature at St Bartholomew's, was, at the fever hospital in Gray's Inn Lane, continually communicated to physicians, and students, and nurses. Not a season passed in which some of the attendants on the sick did not die. It is notorious that during the last twenty years, no physician of the fever hospital has escaped fever in his own person, and that no physician of a general hospital (and I believe in all there is the same distribution of cases as at St Bartholomew's) has suffered fever.

" But at length St Bartholomew's furnished me abundant proof of the contagiousness of fever, when it was accidentally for a time placed under the conditions of a fever hospital. It happened thus : Some complaints had been made that we did not give facilities enough to the admission of acute cases ; and we were reforming our system in that respect at a time when fever happened to be unusually prevalent among the poor. It was in the winter of 1837-8. St Bartholomew's is in the midst of a populous pauper district, and was now the ready refuge of those who suffered. Accordingly, fever patients were admitted in a much larger proportion than the wards would bear. And now the proofs of contagion were fearfully evident. Of the sisters and nurses, those most constantly about the sick, hardly one escaped ; and each new nurse in succession was so soon and so inevitably attacked, that there would have been nobody to minister to the sick had not the students done the office of nurses. Among the nurses there was a great mortality. Of the students many had the disease, and a few died. Many patients, too, who had other diseases, were attacked with fever and died. This little history of my experience has given me a just abhorrence of fever hospitals and fever wards."

It is unnecessary for me to multiply these quotations. All the testimony obtained at that time was to the same purport, [except from one eminent authority in Ireland ; who spoke, however, from observation of the separate system only, and whose experience of the tendency of fever to spread, when accumulated, was exactly of a piece with our own in Edinburgh.] [1] The medical officers of

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[1] I might have added here, but for the necessary brevity, additional valuable evidence, obtained by the medical officers of the Dundee Infirmary, on the occasion alluded to at page 263, and kindly communicated to me in their reports. The evidence from physicians who have had experience of the working of the mixed system is all decidedly to the same purport as stated above. That of several excellent authorities in Scotland and Ireland is of a directly opposite tendency. But these all speak from observation of the occurrences in fever hospitals, fever wards, or general wards unduly crowded with fever patients. It is most remarkable to find, how unanimous all the gentlemen referred to have been in their opinion, one way or the other, according to the nature of their opportunities of observation.

the Infirmary, therefore, felt themselves fully warranted in recommending that
a few fever patients should be admitted into the general wards; and the
managers authorised the adoption of the mixed system of distribution in
October 1842. This distribution has been followed in the University clinical
wards ever since, except twice for a period of three months. [The arrange-
ment of the beds is shown by the following diagram, drawn to measurement,
and representing the female ward. It will equally represent the male ward,
if the two ends be supposed to be reversed in relative position. Each ward is
81 feet long, generally 24 wide, and 10¼ high; but the end at which the side-
room and clerk's room are situated is 30 feet wide. Each bed has 1,100 cubic
feet of space,[1] and 8½ feet of head-room. There is a window on each side of
every fever bed, and a space of six feet between the fever beds and the adjoin-
ing ones. The fever beds are shaded in the plan.
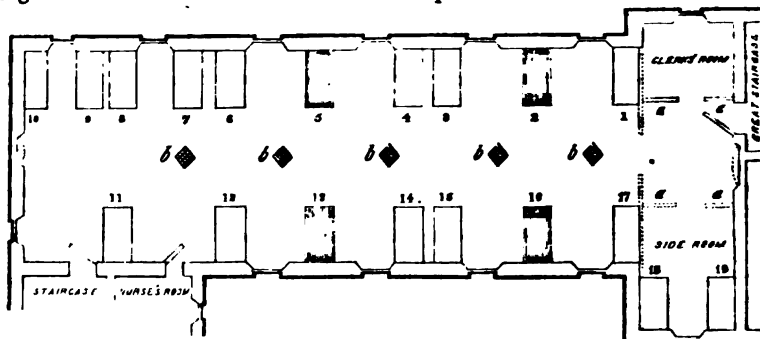
II. Clinical Ward, 1850. 81 feet by 24.
a, screen-wall, 7 feet high. b, ventilators in the floor.

The result of this arrangement, until the appearance of fever among the
general patients in the end of November last, has been most satisfactory.
During six years subsequent to October 1842, every case of fever commencing
in the wards was intimated to the managers in a weekly report. My turns of
duty embraced in all three years and a half of that period; during which I had
to report only five cases, all of them typhus. Two of these occurred in patients
who lay next to the fever beds, and who had not been out of the hospital for
several weeks before seizure; so that they were fairly referable to infection
caught in the ward. The three others had been not more than fourteen days
in the wards, lay at a distance from the fever beds, and had been exposed in a
decided way to infection immediately before being admitted into the hospital;
and therefore they may with equal reason be assumed not to have caught the
infection in the wards. The particulars of one of these cases are well worthy
of mention, as a warning to you of the great caution required in investigating
a question like this. The patient was a young man from a remote part of
Berwickshire, admitted on account of scorbutus, during the singular epidemic
of that disease in 1847. He was convalescing slowly from a very bad attack,
when he fevered, fourteen days after admission; and he died in eleven days more
of typhus in its malignant form. As he had been sent by coach from Ber-
wickshire on a specific day, by arrangement between his country surgeon and
myself, it never occurred to me to doubt that he had come directly into the
hospital from the country. I was much distressed and annoyed, therefore, at
the unfortunate issue of the case, and greatly puzzled to account for the attack,
because he lay in bed No. 10, seventeen feet and a-half from the nearest fever

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[1] The mean space for each bed in the London Hospital is 1,700 feet, in St Bartho-
lomew's 1,670, in the Westminster 1,200, and in the Marylebone Infirmary 935

bed, twenty-seven feet from the next, and all three patients had been bed-ridden ever since his admission. I was nevertheless on the point of noticing it in my lecture, as a case of fever apparently caught in the ward ; when, on my way to the lecture-room, I was told by the clerk who had charge of him, that he had just ascertained that the man had slept for one night before admission in the house of a near relative, where one person lay dead, and another ill, of typhus, and that he slept in the same room with the latter. There could be no doubt, in that case, where he had caught the infection. There were only two cases, then, in these wards, of fever communicated to the general patients in three years and a-half, while the fever beds were almost constantly filled. By a calculation from the average stay of patients in the hospital, and supposing 4 beds of the 38 to have been constantly empty, which is beyond the mark, I find that, during the period in question, 1,100 persons affected with other diseases than fever had passed through these wards ; and, consequently, only one was attacked in 550,—a less proportion, I apprehend, than would have occurred among persons of the same station living at home and in good health. The case of the clerks was equally satisfactory. On the last occasion that I had charge of a fever clinical ward, of sixteen clerks who acted in that capacity in four wards, during a winter session of six months, nine were attacked. But during my service of three years and a-half in the course of six years after the adoption of the mixed system, of the clerks, amounting in all, as nearly as I can remember, to 35, only 1 was attacked ; and his case was one of mild eruptive typhus. Of the nurses not one suffered.

The experience of the other clinical professors, during the same period, was to the same effect ; but they could not supply me with numerical data. The result has been conformable with what was anticipated from the evidence of the English hospital physicians ; and it leaves no doubt of the safety of mingling fever cases with general patients in the proportion of one in five.

We must look, therefore, for some other cause of the late epidemic in the wards than a faultiness, in a general sense, of the system of general distribution of the patients. The facts now brought forward show that it is best accounted for by ascribing it to a disregard of due precautions. And this conclusion is borne out still farther by the erratic course of the disease in the wards. In one instance only did the fever attack a patient in the bed next to a case of fever. In the male ward the beds 2 and 16 were occupied by fever patients on the 7th and 18th of November. The fever beds 5 and 13 continued to be employed for the reception of general patients only. On the 24th November a convalescent from pneumonia, six weeks in the ward, was seized with fever in number 3, at the distance of six feet from 2. On December 1st a convalescent from pleurisy, two months in hospital, was attacked in bed 6, thirty-one feet from the first patient and twenty-one from the second. Two days later a convalescent from dysentery, who had also been two months in hospital, was attacked in bed 9, thirty feet from 3, the nearest bed occupied by a fever patient. .And on December 5th two men in the side-closet, in the hospital on account of syphilitic rupia and chronic pleurisy, the former for twenty-six days, the latter for three months, were both attacked with fever ; and both died. One of these men lay ten feet from the patient who was admitted with fever into bed 16 on the 18th November,—the other was seventeen feet from him ; and a screen wall, seven feet high, separated him from both. In the female ward a single fever patient was admitted into bed 16 on the 31st October. On the 25th of November a patient in bed 18, affected with tinea favosa, and next day a woman with pompholyx in bed 5, both of whom had been at least five months in the hospital, were attacked with typhus, although the one lay twenty-two feet off, and the other at the distance of ten feet, with a seven feet screen-wall interposed. It is impossible to suppose that in six of the seven cases infection travelled these great distances ; and therefore highly probable, from that circumstance alone, that there had been a neglect of the proper precautions. [I put entirely out of view the possibility of the people having been

attacked spontaneously, without infection. For the most frantic non-infec-
tionist must be at a loss to devise an explanation of the fact,—that, soon
after the admission of fever patients into the wards, eruptive typhus, pre-
viously unknown in them, and abruptly ceasing to occur after fevers were
excluded from them, should have seized, in the course of ten days, seven per-
sons out of thirty-five, all living in comfort for weeks before, and all exempt
from the influences which alone he admits to be capable of generating fever.]

The conclusion we may come to from the whole inquiry is, that we may
safely intermingle as before, if due precautions be taken, a few fever cases with
the general patients of the clinical wards. And, therefore, I trust you will make
use, without fear or restraint, of the opportunities of studying the features of
our fever, which you will presently enjoy,—observing, however, my injunction
against using the stethoscope in fever cases, and leaving that to myself and
those of my clerks who have already had the disease.

LECTURES ON GENERAL THERAPEUTICS,

BEING PART OF THE COURSE OF LECTURES ON MATERIA MEDICA DELIVERED IN THE
EXTRA ACADEMICAL SCHOOL OF MEDICINE, EDINBURGH. BY DOUGLAS MACLAGAN,
M.D., F.R.S.E.

LECTURE I.—PHYSIOLOGICAL ACTION OF REMEDIES.

In entering on a new department of the course of lectures on Materia Medica,
allow me briefly to call to your recollection the arrangement which, in the re-
marks introductory to my first lecture, I proposed to follow. It was then
pointed out to you that the means by which diseases may be cured are of three
kinds. First, there is the performance on the body of certain manual opera-
tions—one of the departments of the art of surgery. 2dly. There is the use of
remedies, including, among others, the material substances called medicines ;
and, 3dly. There is the regulation of the functions, and of the external agents
engaged in their performance—the science of hygiene,—a term which, though
properly signifying the art of preserving health entire, embraces some of the
most important methods of repairing it when broken. The two last sets of
means of restoring health make up the subject of materia medica, as taught in
such courses of lectures as the present.

We have hitherto been engaged in considering the hygienic means of pre-
venting and curing diseases, under the two divisions of dietetics and regimen ;
we are now about to enter upon the other great division of the course,—the use
of remedies, including medicinal substances.

Considering how large a portion of the session has been occupied with the
lectures on hygiene, in which I cannot reproach myself with having wasted
your time on irrelevant or superfluous matters, and seeing how much yet remains
for our consideration, you will not be surprised at my having stated in my in-
troduction to my first lecture, my inability to understand, and still less to ac-
complish, the teaching of materia medica in three month courses of lectures.
It is true that, strictly speaking, the term materia medica implies nothing
more than the material substances furnished by nature or art, which we apply
to the body to effect the cure of disease, and in this limited sense it is synony-
mous with pharmacology.

But our present course includes the consideration of something more than
drugs. We have to embrace, in our view, all the means or agencies by the aid
of which the physician may restore the body from a morbid to a healthy con-
dition. We have to treat of the nature and application of *remedies*, and not
merely of medicines.

Bear in mind that the words remedy and medicine have not the same mean-
ing. Every medicine, when it cures disease, is a remedy, but all remedies are
not medicines. To constitute a medicine, we must have a substance possessing

a material existence. Some of our most valuable remedies, the hygienic, such as diet, climate, clothing, exercise, and rest, have already engaged our attention; other remedies, not less important, such as blood-letting, heat, and cold, and along with these, all the material substances called medicines, remain for our consideration. I confess my ignorance of any process of compression by which all this matter may be condensed into the volume of a three months' course, without the risk of losing something that may be essential to you. You must therefore exercise your patience to the end of a winter session, if you wish to carry with you into practice an adequate knowledge of the agents which you may have to employ for preventing or curing disease.

But before we can proceed to consider these agents individually, it will be necessary for you to acquire some idea as to the effects which remedies in general produce, and the mode in which they are supposed to act on the body in curing its diseases. This constitutes the study of general therapeutics, to which I purpose directing your attention in a few consecutive lectures. It necessarily embraces much that is theoretical, or, I should rather say, speculative. This we must not neglect ; but I am much more anxious that your attention should be directed towards what is practical, and this will be my chief aim in the following lectures on general therapeutics.

General Action of Remedies.—Remedies produce upon the system two sets of effects, which, both in a theoretical and practical point of view, it is of importance to distinguish. The first are the primary actions which, as an external agent, the remedy produces on the living textures. These effects are peculiar to, and characteristic of, each individual remedy, and when it is applied to the body under circumstances precisely similar, they are constant and unvarying. These are called the *physiological actions* of remedies. The second series of effects are those which can be produced only when the system is in the condition of disease, and when the remedies are capable of removing the morbid state. They are secondary to, and consequent upon, the physiological actions. They are not constant, but vary with the existing disease. These are called the curative or *therapeutical actions* of remedies. Thus rhubarb, when taken in certain quantities, has the property of purging, and when this occurs in a healthy person, we see nothing further than the physiological action of the drug on the intestines. But when the same dose is given to an individual labouring under headache from undigested matters in the stomach and bowels, and when, on the rhubarb evacuating the bowels, we find the headache to disappear, we have here, consequent upon its physiological action on the bowels, its curative or therapeutical effect upon the head.

Of the essential nature of the inherent power of remedies, we know nothing. We can assign no reason why morphia should produce sleep, and strychnia tetanus, or why these properties should not have been reversed. They are original qualities of these kinds of matter impressed upon them by the Creator. Physiology, however, enables us to have some idea as to the channels through which remedies produce their effects ; and we recognise two ways in which physiological actions may be excited ; 1st, by actual contact with the organ or tissue acted on ; or, 2d, without contact, by an impression propagated to it through the nervous system.

Some agents obviously produce their primary effects by actual contact, as a vesicant applied to the skin, an acrid cathartic to the bowels, or a styptic to an external oozing of blood ; and others undoubtedly act through the nervous system on parts distant from that to which they are applied, as when warmth applied to the belly relieves the pain of colic, or when the heart's action is affected by an irritant or corrosive poison introduced into the stomach. But how are remote organs acted on by those agents whose local effect is neither irritant nor corrosive ? Two theories have been propounded in reply to this question, the *theory of absorption*, and the *theory of sympathy ;* the one accounting for the remote action of medicines, by supposing them to be absorbed into the circula-

tion, transmitted to all parts of the body, and thus to act on one or more of the organs by actual contact,—the other explaining remote actions upon the supposition, that an effect is produced upon the sentient extremities of the nerves of the part to which the agent is applied, which effect is propagated through the nervous system to distant organs, and there manifests itself.

Absorption Theory.—Proofs of the absorption of substances into the circulation are abundant. The most direct evidence of the fact is the substance being found in the blood, or its being detected in distant textures, or in the secretions of organs remote from that to which it has been applied. Thus, prussiate of potash injected into the lungs is found in the blood and in all the vascular tissues (Mayor); alcohol is perceived by its smell in the breath, and has been extracted from the brain of animals poisoned by it (Percy); and iodide of potassium, when taken into the stomach, is readily detected in the urine. These substances can only have reached those distant quarters by having passed into the circulation. Thus absorption *can* take place readily : and it is moreover found that all circumstances which facilitate the passage of substances into the blood increase their activity; thus the effects of most poisons are developed more rapidly when they are placed in the cellular tissue, or when directly injected into a vein, than when they are taken into the stomach. According to Magendie, this absorption takes place by the smaller veins ; but it is not established that they are the sole, though probably they are the chief, absorbing vessels. It is worth while, however, in relation to this point, to bear in mind, that absorption takes place more readily when the circulation is in a moderate state of tension and activity, than when vascular excitement exists; and hence, in diseases accompanied by this condition of the circulation, our special remedies frequently fail to act, until some preliminary measure has been adopted for lowering the action of the sanguiferous system. Thus the diuretic effects of foxglove are most readily obtained where the pulse is feeble ; they in general are not manifested in inflammatory dropsies at all, until, by blood-letting or some such means, we have subdued vascular excitement.

It has been objected to the absorption theory, that the intense rapidity of action of some poisons, such as hydrocyanic acid and conia, is inconsistent with the supposition, that they can have acted in any other way than by an impression on the nervous system. Recent experiments, however, seem to show that substances may be transmitted by the circulation with much greater velocity than has generally been supposed. One or two examples will suffice. Chloride of barium injected into the jugular vein of a dog, has been detected in blood from the carotid artery in seven seconds, in which short space of time it must have passed down to the right side of the heart, from that gone to the lungs, been returned to the left side of the heart, and found its way into the arteries (Blake). Prussiate of potass has been ascertained to have gone the whole round of the pulmonic and systemic circulations in the horse in twenty-five seconds (Hering). According to Mr Blake, no poison acts with such rapidity that there may not have been time for it to pass to distant organs by way of the circulation. His negative results, however, are opposed by what has been positively observed by other and equally competent experimenters, as in the instances of conia and anhydrous prussic acid, where the interval between the application of the poison and the production of its action, is barely, or not all, appreciable. It would be too much, therefore, to admit, that the recent observations on the time required for the action of poisons has settled the question in favour of the absorption theory ; but this at least must be conceded, that the facts now ascertained as to the short time required for substances to pass by the circulation, do not permit us to rely on the rapidity of the action of poisons as conclusive proofs of their acting through the nerves.

Theory of Sympathy.—This doctrine rests mainly upon arguments drawn from the velocity of the action of certain poisons, and these, as we have seen, are not sufficient to support it. In a modified form, however, it has been advocated by Messrs Morgan and Addison, who, admitting that

poisons pass into the circulation, deny that they are carried, in substance, to distant organs, but state that they produce their effects sympathetically, by a peculiar impression made on the nerves of the inner coat of the blood-vessels. The principal experiments adduced in support of this view, are the following :—1. The jugular vein of an animal was laid bare ; two tem-porary ligatures were placed upon it ; the vessel was divided between these ligatures, and reconnected by a tube containing wourali poison. On removing the temporary ligatures, and allowing the blood thus to bring out the poison from the tube into the vein, poisoning took place ; but this occurred whether the ligatures below the poison, which, of course, prevented it from passing down-wards to the heart, were removed or not. They therefore inferred that the conveying of the poison to the heart, and its subsequent transmission to the other organs of the body, was not essential to its action, and that this could only have occurred from its acting on the nerves of that portion of the vessel with which it came in contact. But to this experiment it has very properly been objected, that the poison may have passed backwards with the blood, till it entered a branch of the vein, and thus may eventually, notwithstanding the lower ligature, have forced its way to the heart—a supposition confirmed by the fact, that whilst the poison produced its effects in 45 seconds, when the lower ligature was removed, it required 108 seconds to act when it was left on the vessel. 2. Two dogs, A and B, were connected by their carotid arteries in such a way, that blood from the head of A should pass into the head of B ; poison was then introduced into the cellular tissue of A, but though it perished, the other, B, did not suffer. If the blood of A, therefore, had contained the poison, it ought to have produced some of its effects at least on B. But, in the first place, to this experiment there is the objection that there is no proof,—indeed, not much probability,—that the blood of A ever passed into the body of B at all ; and, secondly, the particular poison used (strychnia), was an unfortunate selec-tion, as it does not specially act upon the brain, to which, in this experiment, it was intended to be directed. It thus does not appear that the experiments of Morgan and Addison can be held as establishing the doctrine of medicines acting by an impression on the nerves of the blood-vessels.

I do not see, however, that it is at all necessary that we should exclusively embrace either the absorption theory, or the theory of nervous sympathy. It does not appear to me to be unphilosophical to suppose, that different physiolo-gical agents may select one or other of these routes as the way of reaching the organ on which they act ; nay, that the same agent may at one time act by absorption, and at another through the nerves. Nor is this inconsistent with known facts. It seems not improbable that alcohol, which undoubtedly gene-rally acts by absorption, may, in overwhelming doses, kill suddenly by an impression on the nerves of the stomach, somewhat in the way in which im-moderate draughts of ice-cold water, or blows on the epigastrium, occasion-ally produce a similar fatal result ; and I think I have found, in some experi-ments to be afterwards mentioned to you, reasons for believing that some irritant emetics, if prevented by acting through the nerves, come to act subse-quently by absorption.

On reviewing, then, the whole facts bearing on this subject, we are not, I think, entitled to come to any more positive decisions than the following :—

That (at all events as regards most substances administered in medicinal doses) the preponderance of evidence is in favour of the absorption theory :—
That it has not been conclusively established that substances, especially in poisonous doses, may not act through the nervous system, independently of absorption ; and that some agents, under varieties of circumstance, may perhaps act in either of these two ways.

The nerves, however, can receive impressions of a certain kind independently of absorption, for we know that a limited part of the body, such as the tip of a finger, if exposed to the vapour of hydrocyanic acid, may be temporarily para-lyzed without any effect manifesting itself on the system at large, or even on any neighbouring part. This has been adduced in favour of the theory of sym-

pathy, but it in reality affords it no support at all, for it wants that very part which is essential to it, viz.—the proof that the impression so received can be transmitted by the nerves to distant parts.   The effect is purely local, and does not appear to extend beyond that portion of the body to which the impression is applied.   The instance just mentioned, hydrocyanic acid, appears to me rather to have the opposite bearing, and to show that its primary effect on the nerves is to abrogate their vital conducting power, and thus render the part acted on, incapable either of transmitting to the brain impressions of sensation, or of receiving from it motory excitation.   In the case of substances locally applied, acting on closely contiguous parts, as in the relief of deep-seated pain by opiates applied to the skin, and of belladonna, applied to the eyelids or conjunctiva, affecting the iris, it is most probable that a minute portion is absorbed, or passes by imbibition to the neighbouring parts.

We know nothing positive as to the mode in which medicinal substances, when they are introduced into the circulation by absorption, produce their effects on those organs on which they specially act.   An explanation has been attempted, by supposing that they act by chemically altering the blood, and thus through changes in the properties of this vital fluid, affect the living solids, which are all more or less dependent for the due performance of their vital functions, on a proper supply of blood in a normal state.   But even if we are to admit, which is by no means proved, that agents which affect the blood chemically out of the body, can similarly act on it within the vessels, we should not have got any nearer to a solution of the question, how certain substances produce certain specific effects on individual organs of the body ?   If all substances which act on any given organ affected it in the same manner, we might account for this, by saying that the blood had chemically acquired such qualities as rendered it unfit to maintain the organ in a healthy state of function ; but seeing that not only different classes of remedies, but different remedies of the same class, give rise to distinct varieties of action in the same organ, we encounter in this hypothesis of alteration of the blood, the very difficulty from which we hoped to escape by it.   How does the blood, so altered,—which, in relation to this question, may be regarded as merely the representative of the medicinal substance itself,—act upon the organ through which it flows ?   To this we can offer no reply.   I certainly have not been able to conceive of the blood, that, in the action of medicines affecting individual organs, it performs any other part, than to serve merely as the vehicle by which the particles of the medicinal substance are diffused throughout the system.   This, let it be observed, is quite foreign to the question, as to whether the blood, when in a morbid or impoverished condition, may, by appropriate treatment applied to itself, be brought into a chemical condition, rendering it more fitted for nourishing and supporting the body.

The most recent attempt to explain how the absorbed particles of a medicinal substance affect the vital organs, is that which supposes that they act by taking part in, and modifying, the decomposition and transformation of the tissues themselves.   That the transformations or vital decompositions of the living textures, should be influenced by medicinal agents, is no more than might be expected.   Colchicum affords a good illustration of this, as it has the remarkable property of very much increasing the amount of urea, a product of decomposition of the tissues, in the urine.   But such effects as this (and it is probable that there may be many such, though we cannot trace them so easily) are clearly consequences of the action of the drug, and in no way help us to learn the cause of its action.   The idea that such a substance as morphia acts as a narcotic, by taking part in the formation of some modified sort of cerebral matter, is a pure and unsupported assumption.   It is evidently impossible, on such a supposition, to account for the actions of poisons which produce their effects almost instantaneously.   We do not know, then, how medicinal substances act upon the organs.   We trace them, in some instances, distinctly as far as into the circulation, but beyond that, we, as et, cannot follow them in their physiological action.

Part Fourth.

PERISCOPE.

SURGICAL ANATOMY.

ON THE PELVICO-PROSTATIC LIGAMENT, OR THE APPARATUS BY WHICH THE
BLADDER, PROSTATE, AND URETHRA, ARE ATTACHED TO THE OUTLET OF THE
PELVIS.

A memoir on this subject, by Retzius, which was originally published in
Stockholm, and translated, by Fr. Creplin, into Müller's "Archiv.," gives a
very lucid account of a region most interesting to the anatomist and surgeon,
and we present our readers with the following abstract of its most important
details.

The author—after alluding to the once-received doctrine, that there existed
a constrictor of the bladder, and to the observations of Santesson, which dis-
proved this doctrine—directs attention to the muscular apparatus surrounding
the urethra, described by J. Müller and Santesson: a structure consisting of
oblique muscular fibres, analogous to those of the œsophagus and intes-
tines. The muscles described by Wilson are, Retzius thinks, less constant,
and are not always to be found on dissection. In the work in which Müller
described the "constrictor isthmi urethralis" (Berlin, 1836), he also made
mention of the two important *ischio-prostatic ligaments*. These structures are of
considerable strength, and extend from the ascending rami of the ischium to
the posterior lateral parts of the prostate. Santesson regards these parts some-
what differently from Müller. He views their attachments to the ascending
rami of the ischium, and to the descending rami of the pelvis, as a tendinous
arch, to which the constrictor urethræ is fixed. Anatomists are much indebted
to Müller for having called attention to these important structures ; for he,
too, considered them as something more than mere ligaments. They are the
cord-like and concave hinder edges of a peculiar fibrous capsule, which em-
braces not only the prostate, but likewise the membranous portion of the ure-
thra ; a capsule which performs the part of an important ligament, and which,
in its cord-like edges, includes the muscular fibres described by Santesson as
the longitudinal fibres of the constrictor urethræ.

Hyrtl endeavoured to show that the so-called constrictor was, in fact, more
than a mere constrictor. The author agrees with him in considering the fibres
which pass from the pelvis to the urethra as part of a very complicated muscular
apparatus, destined to act upon the membranous portion of the urethra, not as
a constrictor, but as an ejaculator seminis, as a compressor of Cowper's glands,
and an assistant in the expulsion of urine. He believes that the circular mus-
cular stratum of the urethra constitutes the true constrictor, and that the func-
tion of the longitudinal fibres just alluded to is in exact antagonism.

The only writer who has described the fibrous structures about the prostate
as a *capsule* is Denonvilliers ("Propositions et Observations d'Anatomie, de
Physiologie, et de Pathologie," Paris, 1837; article 3 ième, "Anatomie du Pe-
rinée"). He finds fault with the ordinary mode of describing the fasciæ, with-
out regard to the parts to which they actually belong, and endeavours to show
that every muscle has its fascia, just like every great blood-vessel and every
important organ in the body, as the larynx in the neck and prostate in the
perineum. His words, where he treats of the latter organ, are as follow :—
" The prostate and membranous portion of the urethra are situated in the
centre, included within the superior, inferior, and lateral fibrous planes, enve-

loped on every side, and sheathed like muscles. . . . . . We can conceive
the membranous portion of the urethra to be contained in a species of irregu-
larly-quadrilateral case."

Retzius had for several years been accustomed to teach a similar doctrine ;
but he attributes certain uses to the pelvic fasciæ, which are not alluded to by
Denonvilliers. We extract his description entire :—

Ligamentum Pelvio-prostaticum Capsulare. — The thin membrane which
covers the urinary bladder, which has commonly been described as a part of
the pelvic fascia, and which passes outwards into the substance of the arcus
tendineus of Santesson, stretches from the lower part of the bladder over the
prostate. On reaching this organ it bcomes thick, and adheres firmly to the
gland. The anterior part of the levator ani is in close apposition with this
capsule, and no fascia intervenes between them. The capsule is thinnest at
the posterior surface of the gland, passes down between it and the rectum, is
prolonged beneath the prostate, covers the back part of the muscular appara-
tus of the urethra, as well as the included glands of Cowper, stretches side-
wards to the ascending rami of the ischium, to which it is attached ; and be-
tween these attachments a thin layer passes down behind the bulb of the
urethra, and terminates by a sharp reflection in the so-called triangular liga-
ment. At the sides of the prostate, where the capsule is strongest, it stretches
outwards, and is fixed to the neighbouring rami of the ischium and pubes.
Thus the sides of the capsule are spread out like a tent, leaving the substance
of the gland and covering the plexus venosi pudendales, with the accompany-
ing arteries and nerves. Its attachments to the sides of the pelvic opening
extend from the horizontal rami of the pubes almost to the tuberosities of the
ischia. The anterior margins of these lateral attachments constitute the apo-
neurotic part of the pubo-prostatic or pubo-vesical ligaments ; the posterior
margins, which are stretched above the fasciculi of urethral muscles proceed-
ing from the ischium, *have a cord-like form thus given to them,* resembling the
corners of a square tent, and pass into the back part of the capsule, which has
been already described. It is this posterior stretching of the capsule which
Müller has figured so well, and termed ligamentum ischio-prostaticum, and
which Santesson has followed further forwards, and prefers to term ligamen-
tum pubo-ischiadicum prostatæ. Denonvilliers calls this side part "aponeurose
latérale de la prostate, or pubio-rectale." Above, the wall of the capsule is only
in contact with a small portion of the prostate, and as it descends from the
bladder and prostate to the nearest surface of the os pubis, it is stretched by
the muscular cords from the muscular coat of the bladder, constituting what
have long been known as the pubic attachments of the detrusor urinæ muscle.
The tense cord-like borders thus formed are the so-called pubo-vesical liga-
ments which have already been alluded to. Between these the capsule forms
a deep grove, and·here also covers the venous *plexus prostaticus impar,* which
lies above the urethra and prostate, and behind the symphysis pubis. The
front wall of the capsule is formed by the triangular ligament of Colles.

Thus, then, both the prostate and muscular part of the urethra are con-
tained in a capsule or *theca,* with four sides, and as many edges, with a broad
basis of considerable extent, firmly attached to the outlet of the pelvis, and
with a wide-spreading floor, formed of Ligamentum triangulare. The two
anterior corners of the basis (*Lig. pubo-ves*) lie close together ; the two posterior
(Lig. ischio-prostatica) are widely held apart. Not only does this apparatus
form a strong ligament-like means of attachment for the prostate, urethra,
venous plexuses, arteries and nerves, it contains, likewise, muscular structures
of great importance for the urethra. The muscular apparatus has, as has been
already explained, its outer attachment along the inner side of the long borders
of the base of the capsule ; a circumstance which has induced Santesson to
regard the Ligamenta ischio-prostatica, as the " tendines constrictoris ure-
thræ."

If we inquire how this important and curious structure has so long escaped

the observation of anatomists, we find that the reason has been that the ordinary mode of describing fasciæ has made us acquainted with parts, without throwing any light upon their anatomy as a whole. Thus the upper side of the capsule is called Lig. pubo-vesicalis ; its front or floor Lig. triangulare ; its lateral surfaces, folds of the pelvic fascia, passing between the levatores ani and prostate ; while its back part has received the name of fascia recto-vesicalis. —*Müller's Archiv., Jahrgang* 1849, Heft, vii., p. 182-190.

MEDICINE.

GANGRENE OF THE LUNG.

Dr Stokes, of Dublin, enumerates the following forms of this unmanageable disease :—

1. A gangrenous eschar rapidly produced, from causes which, under ordinary circumstances, would cause simple pneumonia or pleuritis.

2. Gangrene of the lung occurring as a consequence of diffuse or erysipelatous inflammation.

3. Arising from long exposure of the surface to cold.

4. Occurring in the consolidation of the lung, observed in bad cases of typhus fever.

5. Induced by contused injuries of the chest.

6. Repeated distinct attacks of acute gangrenous disease, with severe symptoms of irritation and high fever. The attacks, with the exception of the first, not having any apparent exciting cause, and continuing to occur for a great length of time.

7. Chronic gangrenous cavity, with great diminution of volume.

8. Recent sphacelus of one lung supervening on a chronic gangrene of the opposite lung.

9. The result of pressure on the nutrient vessels and nerves of the lung, by aneurismal or cancerous tumours.

Errors in diagnosis are likely to occur if all cases of cough, with fetid breath and expectoration are esteemed examples of gangrene. Dr Graves has shown that these symptoms may occur in chronic bronchitis.

Dr Williams and the author have described cases of fetid abscess, with recovery, a disease which has been also observed to follow measles. A gangrenous odour of the breath was perceived in the case of a lady, treated by Dr Stokes for slight bronchial hemorrhage—and when empyema finds vent by the lung, a similar odour is sometimes exhaled. In such cases there is no sphacelus of the tissues, and we have only putrefaction of a secreted fluid occurring after it has occupied its containing cavity.

In copious bronchial effusions, in the fluid contents of open tubercular abscesses, and, above all, in the case of empyema and pneumo-thorax, with pulmonary fistula, the preservation from a septic state of the secreted matters is one of the most singular of pathological phenomena. It can only be explained by assuming that actual organic connection is unnecessary for a certain degree of inherent vitality, or that there is a vital irradiation from surrounding parts. The organization of effused lymph, and its transformation into fat, or cancerous or bony structures, seem to favour these views.

Dr S. once believed that gangræna-pulmonum was most frequently met with in persons addicted to the abuse of spirituous liquors ; he has since witnessed many instances where it occurred in the most temperate individuals. He has never met with an example of the disease in a child. Since the publication of his work on diseases of the chest, in which several forms of gangrene of the lung were described, he has met with several cases presenting the disease under new conditions, which he describes as follows :—

I. Gangrenous eschar in typhoid pneumonia. A good example of this variety,

published by Dr Hudson, in vol. vii. of the first series of the "Dublin Journal," is referred to.

II. Circumscribed sphacelus, in cases of diffuse inflammation.

III. Chronic gangrene, producing dexioracdia.

IV. Frequently recurring attacks of gangrenous disease of the lung.

He details interesting cases of the *second* and *third* variety. Of the *fourth* he has seen two well-marked examples; and, as much obscurity attends the diagnosis of such cases, we subjoin the author's account of their prominent symptoms :—" This form of the disease may be described as consisting in a succession of distinct attacks, with high fever and general constitutional disturbance, followed by copious expectoration, which exhales the most intense fetor, with or without blood. The breath becomes fetid, and the patient's condition, during, as it were, the paroxysm of the disease, is distressing in the highest degree. In both these cases, intervals of apparently complete recovery were observed. The pulse, which had presented all the characters of inflammatory fever, would become tranquil, the respiration quiet, the cough would almost wholly subside, and the appearance of the patient improve so much as to lead to the belief of perfect recovery; when another attack, like that which had preceded it, would set in, and run a course precisely similar to that of the last invasion of the disease. The physical phenomena in both these cases were, in the early stage of the disease, singularly obscure ; and in their character and extent, quite incommensurate with the severity and danger of the disease." Thus, in the first case, after the general symptoms of gangrene were quite unequivocal, physical examination elicited nothing but a little mucous râle, and it was only after the lapse of many weeks, and after repeated attacks of the disease, that some dulness on percussion and obscure gurgling were detected, over the postero-inferior portion of the left lung. In the second case, there was, at first, evidence of a congested state of the lower lobe of the lung, but this soon gave place to a normal condition of the physical phenomena, and it was only during frequent subsequent attacks of the disease that a sonoro-mucous rattle was heard over the lower portion of the lung. The author supposes " that the portion of the organ which suffers death, must be at first very insignificant, but that the surface, which secretes the putrid fluid, is extensive." It seems almost certain, too, " that this fluid is originally poured out in a putrid condition, and the disease is at first especially one of secretion." From his observations on this class of cases, he deduces the following practical conclusion :—" *That in any case where a sudden fetid expectoration has occurred, we are not justified in pronouncing the lungs healthy, or the patient in a safe position, because physical examination, even the most accurate, fails to detect disease."*

The next part of Dr Stokes' valuable paper is devoted to the description of two other forms of gangrene, viz.—the gangrene which Dr Graves has observed to attack a lung previously hepatized, and the putrefaction of blood effused into the pulmonary tissue, which Dr Law considers an important variety of gangrene. The author has met with no examples of these lesions in his own practice. The conclusion of the essay consists of some excellent remarks upon the diseases with which gangrene of the lung may be confounded, and upon the assemblage of symptoms and physical signs, which are likely to assist in making an accurate diagnosis. For these remarks, we must refer to the original memoir, assuring our readers that they will well reward perusal, and hardly admit of abridgment.—*Dublin Quarterly Journal,* February 1850.

GOOSEBERRY DISEASE (STACHELBEERENKRANKHEIT.)

In Meiningen, a peculiar affection of the skin has been long known under the above name. Children seem especially liable to it ; it is observed during the season of the year when the gooseberries become ripe ; and only attacks those individuals who pluck the berries from the bushes, or are much in the gardens. The symptoms are intolerable itching of the skin, followed by eruptions, commonly of the papular form, frequently vesicular or pustular. Some-

times erythematous patches or ulcerations are observed. The flexures of the joints, especially of the lower extremities, are the chief seats of the disease ; and its severity is generally proportionate to the fairness and delicacy of the patient's skin.

Dr Jahn, of Meiningen, had, for several years, been familiar with this species of prurigo ; had observed that the eating of gooseberries had nothing to do with its production, but that individuals who, without even tasting of the fruit, were much occupied in the neighbourhood of gooseberry bushes in gardens, were apt to suffer. The precise connection between the bushes and the skin affection, he discovered in the summer of 1848. On examining the legs of a girl who was suffering severely from the disease, he observed a large number of minute yellow points round the margins of some of the sores, and, on looking at a few of these through a microscope, he found the *points* converted into great spider-like insects. Professor Emmrich, of Meiningen, recognised these mites as specimens of the *Leptus autumnalis* of Latreille. Jahn has since discovered the insect in other cases of the disease ; has ascertained that it is very frequently to be met with on the leaves of the gooseberry plant, and, as different species of the genus *Leptus* are known to attack the human skin, the origin of the gooseberry disease is no longer a mystery. Microscopic examination has shown that the orifices in the cuticle, leading to the glands of the skin, are likewise the passages which the parasite selects for its inroads. The treatment of the disease is very simple. If the patient ceases for a few days to visit the gardens, and washes the affected parts with soap and water, or with a lotion containing *hepar sulphuris*, a cure is soon effected.

Jahn mentions that there are certain circumstances in the topography of Meiningen particularly favourable to the development of the *Leptus autumnalis*, but it is highly probable that it may, in other localities, produce similar effects in warm moist seasons.—*Jenaische Annalen*, Heft I., Band I.

INJECTIONS OF IODINE FOR THE CURE OF ASCITES.

L'Union Médicale of the 7th, 9th, and 12th February, contains a formal memoir on this subject, by M. Leriche of Lyons. The introduction of irritating injections, after the operation of paracentesis, was in modern times practised by M. Lhomme of Château-Thierry, who employed the vapour of alcohol. M. Bodsbröeck of Louvain, and after him Broussais, used, and with some success it is said, nitrous oxide gas. In 1833, M. Jobert twice injected diluted alcohol into the peritoneal cavity of women whom he tapped for ascites, and both his patients recovered. In 1834, M. Vivielle, surgeon of the hospital of La Rochelle, published a successful case, in which ascites, accompanied with enlargement of the spleen, was treated by injections of warm water and filtered decoction of cinchona into the abdominal cavity.

M. Leriche states, that he has himself tried these different methods, but has not obtained such results as to warrant him in recommending them to the profession. Ioduretted injections were first employed by M. Dieulafoy, who repeated the process thrice on the same subject, and finally effected a cure. A similar case, operated on by Dr Leriche, appeared in the "Annales de Thérapeutique" in 1847, and was noticed in this Journal. M. Rul Ogez likewise published a successful case in the "Bulletin de l'Académie de Médicine de Belgique," in 1848, which will be found in the Retrospect of the Monthly Journal for July 1848. In his present memoir, M. Leriche relates the history of three cases of ascites, all successfully treated by evacuation of the effused fluid, and injection of the following solution : Tincture of iodine, 32 grammes ; iodide of potassium, 4 grammes ; water, 250 grammes. The greater part of the injected fluid was allowed to escape by the canula, and a bandage was then applied round the body. In two of the cases, griping pain and some tenderness of the abdomen followed the operation ; but these symptoms yielded to small

doses of opium, or Dover's powder, to cataplasms, and the observance of a restricted diet.

[We fear that M. Leriche has omitted to mention his *unsuccessful* cases. If, as is notorious, the simple puncture of the abdomen for the relief of ascites, sometimes occasions fatal peritonitis, it is only rational to infer, that the risk of this accident will be increased by the introduction of a stimulating injection through the canula. We should like to see a fair account of all cases treated by the stimulating injections, or at least to be assured that no cases had proved unsuccessful.]

ORIGIN OF GOÎTRE.

M. Grange, in a memoir presented to the Académie des Sciences of Paris, on the 10th December 1849, states the result of his investigations regarding the origin of goitre, and the influence of magnesian strata on its production. He holds that goître is independent of meteorological causes, and of poverty, filth, and hereditary predisposition ; that goitre and cretinism depend on the same cause ; but that for the production of cretinism predisposition during early life is necessary. He believes that the use of drinking water impregnated with magnesia, is the true exciting cause of goitre ; and that it can be produced at pleasure, by using for several months the water from certain springs which are known to possess this deleterious property.

The author has experimented on the employment of culinary salt, containing from $\frac{1}{10.000}$th to $\frac{1}{3.000}$th of iodine, and has found, that if used for all domestic purposes, instead of common salt, it is capable of curing and preventing goître. He *proposes to demonstrate, by direct experiment*—1. That the water of certain springs is really the cause of goitre. 2. That the development of the tumour is due to the magnesia contained in the water. 3. That by separating the magnesia from these pernicious waters, it is in our power to render their use as drink harmless. 4. That the use, for one year, of salt charged with $\frac{1}{3.000}$th of iodine, is a complete prophylactic against goitre, and does not induce any other disease. 5. That the French government has it in its power, by distributing ioduretted culinary salt, in the districts where goitre is notoriously frequent, to cause the disappearance of the disease, which in France alone is believed to affect about *half a million* of individuals.—*Gazette Medicale*, 1849, p. 972.

[We wish M. Grange all success in his proposed demonstration. Meanwhile it must not be forgotten, that other theories, advanced with equal confidence, have failed to account for the production of goître. The proposal to supply goîtrous districts with ioduretted salt, seems worthy of attention, and could, we believe, be carried into effect at very small cost.]

PURE ALMOND OIL A SUBSTITUTE FOR COD-LIVER OIL.

P. Martin Duncan, M.B., physician, and Mr Nunn, surgeon to the Essex and Colchester Hospital, state that they have derived the best effects from the exhibition of almond oil in upwards of 250 well-observed cases. They are in the habit of prescribing it without any adjunct; at first in ʒj. doses, half an hour after every meal ; the dose is gradually increased. In no instance was any purgative effect observed.

"A drop of Eau de Cologne, or of some essential oil, renders the neat oil anything but disagreeable to the taste. It is an excellent vehicle for the exhibition of iodine in small doses, the latter being triturated with a small quantity of olive oil, and then added to a larger amount of oleum amygdalæ. The following :—℞ Ol. Amygdalæ, ʒss. ; Ol. Olivæ, ʒij. ; Iodinii, gr. ½. M. Cap. ½ ter die—has been of great use in several syphilitic diseases of the bones and skin, in broken-down constitutions, in chronic pleurisy, and in many cases of chronic enlargement of the glands of the neck. The influence of ʒss. of this oil of almonds taken daily, upon the weight of some patients progressing in health under its exhibition, is very remarkable : in one case there was a weekly

increase of 2 lbs., and in another of 4 lbs. Care must be taken to attend to the biliary secretion during the exhibition of the oil, which is contra-indicated when there are evidences of symptoms of local congestion or of inflammation."
—*London Medical Gazette,* February 1850.

[This proposition was brought forward in 1840 by Dr Baur (Archiv. für die gesammte Medicin, Bd. I., s. 256); but experience has proved that the *occasional* purgative qualities of vegetable oils are opposed to their beneficial employment.]

MIDWIFERY, AND DISEASES PECULIAR TO WOMEN.

CHLOROFORM IN MIDWIFERY IN AMERICA.

At the last meeting of the American Medical Association the greater part of the report of the committee on obstetrics was occupied in the discussion of anæsthetics in midwifery ; and in order to present the subject candidly to the Association, the principal objections of those opposed to its use were incorporated into the report. The committee gave it as their deliberate opinion, that the chances of a patient's recovery are greatly increased by the use of anæsthetics, and the question is not whether they may or may not be safely administered, but whether they *can be rightfully withheld.* Who that has ever compared the panting and exhausted subject of an instrumental labour, with the calm and tranquil recipient of anæsthesia, could fail to arrive at the same conclusion ? In regard to the choice of anæsthetics, the report declares that chloroform has every advantage over ether, except *in point of safety,* but that in experienced hands this objection does not obtain. Dr Channing's contribution to the literature of this subject, in his work " Etherisation in Childbirth," received a justly-deserved and flattering notice in this portion of the report. The report was accepted, and referred, without comment, to the committee on publication.—*Philadelphia Medical Examiner* for 1849, p. 359.

ON THE INFLUENCE OF REPEATED BLEEDINGS AND LOW DIET IN RESTRAINING THE INTRA-UTERINE DEVELOPMENT OF THE FŒTUS ; WITH PRACTICAL APPLICATIONS. BY M. DEPAUL.

In a long memoir on this subject, M. Depaul has attempted to revive the doctrine of some old authors, that the growth and development of the fœtus in utero may be considerably impeded, by putting the mother upon the same general plan of treatment as that recommended by Valsalva, in cases of internal aneurism. To procure the desired object, the mother should be kept during the latter half of her pregnancy upon a diet of the lowest scale, and should be profusely bled at intervals.

M. Depaul believes that this plan should be ranked in the art of Midwifery beside the artificial inducement of premature labour, and to this latter he thinks it decidedly preferable, because the labour is allowed to come on at the full time, when the passages are naturally well prepared for the passage of the child.

M. Depaul terminates his memoir by the following summary of conclusions :

1. The use of bleeding and low diet on the part of the mother, have incontestably some influence upon the development of the infant during its intra-uterine life.

2. Advantage may be taken of this plan of treatment in cases of deformed pelvis ; and it may be substituted, under certain circumstances, for the induction of premature labour.

3. It may be applied with equal advantage in cases where there is no contraction of the pelvic canal, but where the general large size of the fœtus has already, in former labours, proved such a cause of difficulty in the labour as to cost the child its life.

4. The influence of the low diet when it is strictly adhered to for a sufficient

length of time, is much more powerful than that of repeated bleedings. These last indeed may be carried to too great an extent, and be the cause of abortion.

5. Bleeding, to an expedient amount, ought, however, to be resorted to at the same time as the debilitating regimen. It is particularly useful in the latter months of pregnancy.

6. This method, wisely carried out, has no injurious influence upon the course of the pregnancy, nor upon the future health of the mother or child.

7. It is impossible to give exact rules as to the conduct of this method of treatment. It must be modified according to the circumstances of each particular case.

8. Lastly, in order to success, the treatment must be commenced in good time, and continued till the birth of the child.—*L'Union Médicale*, 12th Jan. 1850.

MONSTROUS BIRTHS—REPEATED FIVE TIMES IN THE SAME FEMALE.   BY DR MARTIN.

The following letter to Professor Dunglison contains the account of the above case :—" I will cite the cases of monstrosity occurring in a lady with whom I have been well acquainted for about fourteen years. Previous to that time she gave birth to two well-formed and well-featured children. I attended her in the first case of monstrosity. At the period of my earliest acquaintance with her, she moved in the middle walks of society, and had enjoyed good health up to that time. She was well developed in figure, and gave birth to a child perfectly formed in every respect, with the exception of its head and face. The eyes were placed at the top of the forehead, and all the superior and posterior parts of the head were deficient, the corresponding bones of the cranium being wanting, and the opening fringed round with something very like liver. Her labour was attended with no difficulty ; but the liquor amnii was very abundant, and the child was still-born. She had a speedy recovery.

In about eighteen months after this she gave birth to another child which was properly developed as to face and head, but the flexor muscles of the legs and arms were in fault ; I could not straighten its legs, arms, fingers, or toes, owing to the flexors being too short. Her labour this time was not so easy, in consequence of the arms being flexed on the breast, and the hands below the chin ; yet it was not attended with much difficulty, and the liquor amnii was again abundant. The next two confinements were similar to the first I have detailed, in every respect, the monstrosity being the same ; from both she had a speedy recovery. At the next (in the winter 1843-44), I was not present, being in attendance on the medical lectures in Philadelphia, but I understood that the labour was not accompanied with more severity than is common to woman ; the child was defective on the top of the head, and the liver-like growth was there as in the other cases. In 1846 she was confined again, and I was summoned to watch over her difficulties during her labour. She was in great hope that she would have a perfect child, being led to this conclusion by the strong movements of the child *in utero*. During the labour the os tincæ dilated rather reluctantly ; but when dilatation did occur and the membranes were ruptured, a great discharge of liquor amnii took place, and I was enabled to discover that the head was defective while it was still at the superior strait. The deficiency was the same as in the other instances, but the child was born alive, lived about three hours, moved, and made considerable muscular exertion. There was hemorrhage from the liver-like production on the top of the head. This child assumed a cerulean hue, becoming more livid from the moment of its birth till its death. The lady recovered rapidly. The last misfortune was in 1847, when she had a miscarriage ; the embryo was about two inches in length, and the defect at the top of the head could be very readily discovered. Here, then, are five cases of mature labour, the products of which were all defective at the top of the cranium. One carried to the full term and defective in the flexor muscles, and one abortion, in which the embryo exhibited the same defect at the upper portion of the cranium, and all occurring in

the same female, apparently in the enjoyment of perfect health."—*New York Journal of Medicine*, March 1849.

EXPLOSION OF A CYST OF THE CERVIX UTERI, UNDER CAUTERISATION.
BY M. MELIER.

This woman, æt. 23, and the mother of two children, had for several years suffered much from pains in the hypogastrium, the vulva, and in the loins. There was a copious leucorrhœa, and the catamenia were irregular. Her father, himself a physician, finding his remedies useless, sent her to consult M. Fauconnau-Dufresne, who called in the aid of M. Melier. On the anterior lip of the os uteri there was found a sessile tumour, of the size of a small nut, firm, elastic, not fluctuating, not tender to the touch, and having the same colour as the surrounding parts. On its surface could be seen large blue veins. Various simple means, as rest in the horizontal posture, baths, lavements, &c., were used in vain.

In five months after this time she again returned to Paris, and her condition was much worse. The tumour had increased in size. M. Melier now called in M. Marjolin in consultation, who advised that the tumour should be cauterized with the hot iron. Accordingly, M. Melier applied a cautery at a white heat, and the swelling immediately *burst with a loud crack*, showing that it was of a cystic structure. It gave issue to a clear, thick, stringy fluid, like white of egg. The patient's health was subsequently completely restored.— *Memoires de la Société de Chirurgie*, Tom. I. p. 293.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.
RAPID DECOMPOSITION OF THE HUMAN BODY.

Dr Alfred Swaine Taylor has published an important essay on this subject in the " Medical Gazette " of the 4th January 1850.

After giving an account of a case which occurred last October in Guy's Hospital, in which the body had arrived at a most loathsome stage of decomposition within *sixteen hours* after the patient's death, he introduces the following remarks regarding the causes of rapid putrefaction, and the inferences to be drawn from similar post-mortem phenomena :—

" The cause of this rapid access of putrefaction in the body of an individual dying in the prime of life, and at a season of the year when the process is considered to be slow in its appearance, may be assigned to two circumstances,—1st, To its having been exposed soon after death to an atmosphere at about the temperature of 65° ; and, 2d, To a morbid or diseased condition of the solids and fluids of the body, which may have rendered them more readily susceptible of chemical changes. The intemperate habits of this man, and the excessive quantity of alcoholic liquors which he drank, may have tended to produce changes in the condition of the blood and fluids which would render them easily liable to decomposition (other circumstances being favourable) so soon as the breath had left the body. The exposure to the temperature of 65° ceased when the body was removed from the ward,—*i. e.*, in less than ten hours after death,—but putrefaction had then already commenced ; and it is well known that when this process has once begun, it continues to spread with great rapidity, even when the conditions of exposure subsequently are less favourable to its continuance.

" In this case the whole history is known ; but in regard to the bodies of persons found murdered, the facts which are necessary to form a correct judgment cannot, of course, be ascertained. Let us suppose that a body in such a state had been found buried beneath the floor of a room, and a medical man had been asked to assign the period of death,—he might, from common experience in such matters, have declared it to be impossible that the body could have been living within *twenty-four hours* of the time of its discovery ; and suspicion

might be thus removed from persons really guilty of murder, because it could perhaps be clearly proved that they had not been in or near the premises until within a day of the discovery of the body. An innocent person seen in company with the deceased five or six days before, might, on the other hand, be unjustly suspected of having been accessory to his death.

"This supposed case is not taken for the purpose of throwing doubt upon medical opinions, but to suggest great caution in forming them."

In the same paper Dr Taylor takes occasion to combat the vulgar notion that *lime* possesses the extraordinary property of hastening the process of decay. He has been unable to find in any work relating to the signs of death, facts which tend to bear out the popular belief, that lime accelerates putrefaction.

"By the strong affinity of this alkali for water, as well as by its chemical power of fixing carbonic acid, sulphuretted hydrogen, and other animal effluvia, it is admirably adapted to prevent the escape of these effluvia from a putrefying corpse ; and, when placed in a coffin or a grave, it will then, to a certain extent, exert a beneficial influence.[1]

"On the unbroken human skin, powdered lime appears to have no corrosive or chemical action whatever. It is the least soluble of all the alkalies, excepting magnesia. A stiff cream of lime possesses no corrosive properties on the skin,—while solutions of potash, soda, and ammonia, even when considerably diluted, rapidly dissolve it. Potash and soda, however, by this well-known action on animal matter, do not accelerate putrefaction ; they merely act chemically by combining with and dissolving the tissues ; and, were lime more soluble than it is, it would probably soften and dissolve the soft parts of the body."

He likewise details some original experiments on the subject, which seem to warrant his conclusions :—

"There is an entire want of evidence that lime under any circumstances quickens putrefaction. This process is essentially dependent on *heat*, *moisture*, and *air*, and according to the presence or absence of these conditions, so is the process rapid or slow. The three conditions must co-operate, or putrefaction will be arrested. Thus a *temperature* of 32° or of 212° puts an end to the process. As to the effect of *moisture*, I have found that albumen—a substance which putrefies in a few hours—may, when deprived of its moisture by chloride of calcium, be kept without any change for twenty years exposed to the air at the most favourable temperature for putrefaction. The effect of *air* is entirely due to oxygen. In an experiment performed some years ago, a piece of beef was perfectly preserved for *two hundred and sixty-four* days, through all changes of temperature during this long period, without putrefying. This was effected by merely suspending it in a bell-jar containing deutoxide of nitrogen gas, which, as it is well known, acts by preventing the access of oxygen.

"The popular idea that lime quickens putrefaction has probably arisen from the supposition that it was used with this view in coffins and graves. Its action, however, is really that of preventing the diffusion of noxious effluvia ; and for this purpose, by its rapid combination with carbonic acid, sulphuretted hydrogen, phosphuretted hydrogen, and animal effluvia generally, it is admirably adapted. In an experiment recently performed, it was ascertained that a drachm and a half of slaked lime removed in ten minutes the whole of the sulphuretted hydrogen and carbonic acid from forty ounces of foul sewer water, which, before the addition of the alkali, evolved sulphuretted hydrogen in large quantity. In this respect it was found to be much superior to the chloride of zinc, which, at the best, can only remove a part of the sulphuretted hydrogen, and does not at all affect the other offensive effluvia.

"Lime will be found a very cheap, safe, and useful deodorizer. Its value as such does not appear to be sufficiently known."—*Medical Gazette*, No. 1153.

[1] "Lime is largely used in the cleansing of skins for tanning ; it has no chemical or corrosive action on them, but merely serves to combine with and remove the fat."

UNINTENTIONAL SUICIDE BY CHLOROFORM. BY J. JEFFREYS, M.D.

Dr J. was called, March 7th 1849, at seven A.M., to visit a servant girl, stated to be seventeen years of age. He found her dead, under the following circumstances :—The body was lying on a feather bed, on the left side, with the head bent forwards to the edge of the pillow ; the arms crossed; the right hand containing a linen handkerchief, crushed into small compass, was pressed with such force upon the upper lip and nose as to produce considerable distortion ; the left fore-arm crossed the right, as if to aid the pressure on the mouth ; the knees were drawn high up on the bed ; the eyes were open, and the pupils dilated ; her night-cap was tied very tightly under the chin ; the bed-clothes were drawn over the head ; the face, especially at the lower part, the throat, chest, and arms, were quite livid ; the body was warm and exceedingly rigid, so much so, that in forcing the hand from the mouth the whole body was turned over; the handkerchief which she held had a faint smell of chloroform. From the impression on the soft bed, it appeared that she had not moved from the position assumed on first lying down. No phial containing chloroform, or any drug, could be found about the room ; but there was lying on the table a piece of paper having the appearance of having been recently used as an envelope for a phial. On removing the body, however, from bed for post-mortem examination in the afternoon, there was found in the bed a two-ounce phial, containing chloroform, and from which it was subsequently ascertained that three drachms had been taken. The cause of death was thus revealed.

The following were the appearances on dissection :—

Muscles in a healthy condition. Left lung livid and much congested throughout, but most so at the dependent parts. The lower lobe, and the posterior portion of the upper, upon the right side, presented the same dark purple colour as the left ; but the middle lobe, and anterior portion of the upper, were of a bright scarlet colour externally and throughout their substance ; this last portion was not congested. The bronchi contained some frothy fluid. At the rima gottidis there was a thickening on each side, with an excoriated surface for about three or four lines. Something of the same kind was noticed in the fauces near to the glottis. The thymus gland was large, its cavity containing a puriform fluid, as usual in children. The heart appeared to be unusually empty, and was flaccid; the ventricles having lost their convexity, and having fallen into a somewhat concave form. The heart contained a little blood. The blood was everywhere perfectly fluid, with the exception of one very small coagulum in the right side of the heart.

The stomach contained food in the process of digestion. There were no important appearances in the abdominal viscera, as appeared from Dr Jeffreys' account.

The brain and its membranes were perfectly normal. There was no congestion of vessels ; no change of colour or consistence in the substance of the organ.

It was ascertained that the woman was in the habit of inhaling ether and chloroform, for the purpose of producing intoxication; and that she had done so on the preceding evening. She was observed at half-past nine P.M. in the same position as that in which she was found dead. She made no reply to a question addressed to her at that time, and was thought to be asleep.

Dr J. adds :—" From this narrative it appears conclusive, that she died from the use of chloroform, the particular effects of which were seen in the congestion of the lungs, in the emptiness of the heart, and fluidity of the blood. It is a point of interest, that the brain was so free from congestion or other abnormal appearances, especially when we consider the stricture made about the throat by the string of her cap."—*Boston Med. and Surg. Journal, in New York Journal of Medicine*, May 1849,

[The woman appears to have died in a syncopal state, and not from asphyxia.

The difference of colour in the different parts of the lungs was probably owing to gravitation of the fluid blood. This seems likely from the state of the left lung, and those portions of the right which would be dependent in a body lying on its left side. There is nothing specially indicative of chloroform in these appearances.

[The case is a solemn warning to those who prostitute a valuable agent like chloroform to purposes of sensual gratification.]

ARSENIC IN SULPHURIC ACID. BY A. W. DAVIS, ESQ., PRESTEIGN.

The presence of arsenic in sulphuric acid, and consequently in muriatic acid, and all the compounds into which these enter, is, I think, a subject deserving of attention.

That the fact is as I have stated, there is what I consider incontrovertible evidence to prove. In some lectures " On the Nutritive Value of different Articles of Food," delivered in the University of Oxford, by Dr Daubeny, and which I read only a few weeks since, it is stated incidentally, by way of caution to persons using muriatic acid and soda in making unfermented bread, that they should see that the acid they employ is free from arsenic ; for that a friend of the professor found the whole of his family seriously disordered from the use of unfermented bread, made by his cook, under his own directions, owing to the muriatic acid employed containing arsenic.

Upon reading this, I wrote to Dr Daubeny, who very kindly referred me to his friend, Dr Charles W. Henry, who had made the discovery, and by him I have been favoured with a highly interesting account of the particulars, more strictly medical than could properly have been given in a popular lecture. Dr Henry says :—" My attention was forcibly called to the question of impurities present in the common muriatic acid, by the injurious effects of bread, made on the non-fermented principle, upon my own family and myself. In all, nausea and severe pains in the stomach followed its use (continued for three weeks before discovery) ; in some, instant vomiting and irregularity of bowels, though not actual diarrhœa; and in one case (my footman), the outbreak of the eczema arsenicale. I lost little time in testing the acid for metallic impurities, but not happening to have any sulphuretted hydrogen, could at first detect nothing. When I procured some, I was astounded by its throwing down a dense yellow precipitate, which I at first suspected to be tin (from knowing that the manufacturers also made muriate of tin), but soon discovered to be arsenic."

There is not, I believe, any notice of the existence of arsenic in sulphuric acid in any English chemical work ; but Dr Henry found the fact fully stated in the large German edition of Berzelius, who attributes it to the employment, in the manufacture of sulphuric acid, of a native sulphur, or sulphuret, containing arsenic ; and Dr Daubeny, in the valuable lectures before alluded to, says :— " Our supply of sulphur is derived at present from two sources—namely, the sulphur mines of Sicily, and the copper pyrites of this country. The former is entirely free from arsenic, and may therefore be safely employed in the production of sulphuric acid ; but the latter always contains more or less of it, and should, therefore, be carefully avoided, as it imparts it to the acid products generated by its combustion." Dr Henry refers to a paper in the Manchester Society's Memoirs, vol. vi., p. 590, by Mr Watson (a pupil of Dalton), who ascertained that 1000 grains of concentrated sulphuric acid contained 5½ grains of arsenious acid. Mr Watson also analysed some of the arsenious acid employed, as before stated, by Dr Henry, and established the presence of arsenic by all the known tests.

The liability of sulphuric acid to contain arsenic is thus established beyond all doubt ; and although the minute doses in which the extremely dilute acid of the Pharmacopœia is prescribed, may be insufficient to occasion deleterious effects, the larger proportion that enters into the composition of the neutralised sulphates renders it desirable that some mode should be adopted to render the

acid employed for all medicinal purposes chemically pure.—*Provincial Jour-
nal*, quoted in *Dublin Medical Press*, January 20, 1850.

[The occurrences in Dr Henry's family are well worthy of being recorded,
as non-fermented bread, made with muriatic acid, is much in use.   The
bakers in Edinburgh, who prepare it largely, always use a pure acid, which
can be got, at a very reasonable price, from any respectable chemist.   The
common commercial acid, from its containing, not only occasionally arsenic
(though rarely more than a slight trace), but always iron, and other impurities,
is quite unfit for the baker's use, as it gives his bread a bad colour.

We do not understand what Mr Davis means by saying, that there is no
notice in any English chemical work of the presence of arsenic in sulphuric
acid.   It may not be stated in systematic works on chemistry; but in all the
works where adulterations are likely to be treated of he will find it—*e. g.*,
Pereira's "Materia Medica," 2d edit., published in 1842 ; Boyle's "Materia
Medica," 1847—both of whom quote Mr Watson; Neligan's "Medicines and
their Uses," 1847; Christison's "Dispensatory," 1848 ; and in the tests of the
London, and more especially the Edinburgh, Pharmacopœias, this impurity is
provided against.   It is notorious that it arises from pyrites being used instead
of sulphur, in the manufacture of the acid ; but in well-arranged chemical
works the greater part of the arsenic is deposited in the large tube leading
from the pyrites furnace to the sulphuric acid chamber; and the acid so pre-
pared is, at least in Scotland, very rarely sent into commerce, but is used up
by the manufacturers themselves in the preparation of other chemicals—hence
the presence of the arsenic in small quantity in commercial muriatic acid.
We have frequently, however, found the commonest commercial muriatic acid
so free from arsenic as not to give the least indications of its presence when
tested by Marsh's method.]

TRIAL AND CONVICTION FOR POISONING BY ARSENIC.

At the Glasgow Circuit Court, on 9th January last, Margaret Lennox or
Hamilton was tried and convicted of poisoning her sister-in-law, Jean Hamil-
ton, by arsenic, and was subsequently executed for the crime.   The indictment
charged the prisoner with having administered arsenic to her victim on repeat-
ed occasions.

It is unnecessary for our present purpose to narrate the general, moral, and
circumstantial evidence upon which the prisoner was convicted.   We restrict
our report to the medico-legal part of the case.   It is proper, however, to
state the following facts :—The deceased, who was nursing her illegitimate
child, had a bank deposit-receipt for L.20, which the prisoner stole, endorsed
with the deceased's name, and so got possession of her money.   It was to avoid
the detection of this theft that the murder was perpetrated.

The general history of the illness of Jean Hamilton will be gathered from
the following evidence, given by her mother :—

Jean Hamilton was mother of the deceased Jean Hamilton, who died on
Sunday the 8th of July last.   Grew ill first on the Thursday fortnight before
her death.   On the morning of the 21st of June, witness was knocked upon,
and went to the room where she was sleeping, where she found her throwing
violently.   She complained of having been ill, and throwing through the
night.   They thought it was bile.   She complained of pain in her breast and
stomach.   She said sometimes it was a burning pain.   She never rose from her
bed again.   She vomited a great deal in the course of the Thursday.   She had
a sore throat and mouth, but witness cannot tell when it began.   Thought it
was early in her illness.   Dr Craig was sent for on Thursday, and gave her
medicine.   The vomiting continued throughout the day.   Witness sat up with
her during the night, when the vomiting also continued.   On Friday she was
much the same.   On Saturday Dr Craig sent Dr Brown.   She was better before
Sabbath.   Her belly was swollen.   Nothing remained long on her stomach ; but

some medicines remained longer than others. She was rather better on Monday and Tuesday. On the evening of the latter day she got some medicine. She thought it was given her by the prisoner. The prisoner usually gave her the powders, but the witness sometimes gave her medicine out of a bottle or cup, which she got from Dr Brown. Could not say whether the powder given her on Tuesday evening was given by the prisoner or not. The prisoner always gave them when she was there, but when she was absent, the witness gave her them. She became worse on the Tuesday night. The vomiting came on again very hard and frequent. She vomited a kind of green stuff. Dr Brown was sent for on Wednesday about four o'clock in the morning. She followed Dr Brown home, and got a bottle from him, from which she gave her a dose about five o'clock. The vomiting stopped sometime afterwards. Her stomach continued sore. She said that she thought inflammation had begun, there was such a pain in her heart and stomach. Her belly was swollen then, and had been so previously. She frequently asked for water to cool her mouth. Some time on the Thursday she said she thought her inside had given way, she took so great a "lax." Her legs became powerless, so that she could not lift them after Wednesday. Her arms became powerless also some days before she died. She complained that her feet were cold; but witness on feeling them did not think so. She was again better on Thursday; her mouth was better, and the vomiting abated. Sometimes on the Friday and Saturday "she felt the taste of her mouth." She again got medicine on the Saturday night, the night before her death. She got a powder. Witness thinks that it was given to her son, the prisoner's husband, to give her when it was ready. Margaret Lennox, the prisoner, made it ready. She saw it in the spoon. It was mixed by her. It was a large powder of a white colour. This powder the prisoner stated to be calomel, which the deceased wished to have to check her illness, which she supposed to be a bilious attack. The prisoner accounted for the large size of the powder, by saying that the doctor had put *sweet nitre* among it. After taking the powder she had a great "lax." It came on about an hour after she got the powder. Vomiting came on also shortly after, of a very violent character. She became very ill. This continued till about six or seven o'clock, when it ceased for about an hour, but afterwards returned, and continued till she died, about mid-day on Sunday.

Cross-examined.—Long before her illness, deceased had been subject to bilious attacks. She had been frequently ill in Edinburgh, and after her return she complained of ill health. The child was born on the 3d of June 1848. She sometimes afterwards threw up matter that had a green appearance; and about a fortnight before her illness occurred, she complained of a threatening of bile, and said were it not for her milk she would take calomel. On the Thursday before her death she wanted to take calomel, but the doctor would not allow her. In her former attacks she vomited some.

The medical men who saw Jean Hamilton during her illness gave the following testimony :—

Dr Craig, surgeon in Strathaven, deponed,—That he was called to see Jean Hamilton on Thursday, 24th June. She was in bed, and appeared to be very ill from vomiting. She had vomited a good deal. He prescribed two powders, with three grains of calomel and half a grain of opium. She was to take one of them at an interval of two hours. When he re-visited her the same day, he gave her a sort of saline mixture, containing carbonate of soda and solution of morphia, to stop the vomiting. It was quite a harmless mixture. Returned the following day, and on the 22d, 23d, 24th, 25th, 26th, and 29th of June. She vomited much. She got weaker, but not so weak as might have been expected. She could not leave bed. Witness never thought of poison in the matter. She complained constantly of thirst; she drank a good deal of water, but it generally came out of her stomach again. Nothing remained on her stomach. Her tongue appeared to be clean. Did not visit her between 26th and 29th, because he considered she was getting better. After the 29th he visited her on

the 3d July. She was still getting better. The vomiting was less frequent and violent. Visited her again on 6th July, and she was still keeping better. He understood that the vomiting had ceased, or nearly so. Saw Margaret Lennox occasionally in the house. Does not recollect of saying that it was not proper for her friends to know what was wrong with her. Witness never saw such symptoms as she had, continue so violent for so long a time. On the 22d gave her four powders, with two grains of calomel in each, but no opium, and some effervescing mixture to stop the vomiting. On the 23d, called on Dr Brown, who recommended a blister, beef-tea, and arrow-root. On the 24th he sent up six colocynth pills; that was all the medicine she got from him.

Dr Brown, Strathaven, deponed,—Was called on to visit Jean Hamilton on the 23d June. Found her very ill. She was so much exhausted that she could scarcely speak. She had incessant vomiting. She complained of a severe burning pain in the stomach, and of great thirst. Her bowels were very much swollen, and she complained of the same pain there. The pain was increased by pressure. Witness was asked by Dr Craig to visit her, and recommended a fly blister on the stomach. Next day visited her, and she was much relieved— he attributed that to the blister. Prescribed no medicine that day, but in the evening suggested to Dr Craig that she should get two grains of calomel. On 27th, was sent for at five in the morning, and she was very ill. Her extremities were cold, and she appeared to have been vomiting violently. He recommended the blister to be re-applied, and gave her a solution of carbonate of soda. In the afternoon she was easier. On the 28th he recommended two grains of calomel and a drachm of magnesia, to be taken in separate doses. Did not see her again till 2d July, when the vomiting had become less frequent. The last visit he paid her was on the following Thursday.

The purchase of arsenic by the prisoner was next proved, and we give this part of the general evidence as an example of the facility with which such a poison may be obtained.

Catherine Hilston, wife of Mr Hilston, apothecary, Strathaven, deponed,— That she sometimes assisted in his shop. They kept arsenic. Recognised the prisoner as having bought arsenic from her one day last summer. Remembers the time at which Jean Hamilton died. It was before that that the arsenic was bought. Prisoner was in her shop the day before Hamilton died. Witness served her when dressing for church on the Saturday. Could not say what she sold her that day. Does not think she got arsenic on that day. To the best of her recollection she sold her the arsenic three or four weeks before the death of Jean Hamilton. Prisoner said the last arsenic she had got she put into the inside of a herring, and that a man named Steele had thrown it on a dunghill. She had put it into the herring for rats near her own house. About half a drachm of arsenic is sold for a halfpenny. Witness always writes " arsenic—poison " on it. At the desire of the fiscal witness put up a pennyworth in presence of Dr Lennox; it weighed 73 grains. On the Wednesday after Hamilton's death, heard that Margaret Lennox was suspected. Her impression was that both quantities were bought within four weeks; could not say when the last quantity was purchased.

The report of the post-mortem examination by Drs Walter Lennox and Brownlee Craig was read. It stated generally that deceased had died from inflammation of the bowels, caused by an irritant poison; and, amongst other details, mentioned the appearance of black spots from extravasation into the submucous tissue of the stomach, and the existence in the ileum of two or three ulcers, which had destroyed the mucous and muscular coats, and exposed the peritoneal coat.

Dr Penny, Professor of Chemistry in the Andersonian University, Glasgow, deponed,—On 13th July last, he received a sealed jar from Thompson, messenger-at-arms in Hamilton. He made a chemical analysis of its contents. The doctor then read his report, which detailed the several experiments he made, which resulted in the discovery of the presence of arsenic in all the

matters contained in the jar. Part of the contents were given to Dr Crawford afterwards, and he analysed them. Witness estimates the quantity of arsenic which he discovered at about 20 grains. It is generally considered that 4 grains will prove fatal ; 2 grains have been known to kill. If there was vomiting after it was administered, a considerable portion of the arsenic would be carried off.

Dr Crawford, Professor of Medical Jurisprudence in the Andersonian University, deponed to have waited upon Mr Penney in his private laboratory, and assisted him in making the above examination and analysis, and drew up a report upon the subject, which, having been handed to him, he read. It stated that the result of the investigation left no doubt upon his mind of the presence of arsenic. From the post-mortem appearance of the body, as described to him, and, assuming that the portions of the stomach examined by himself personally belonged to the same body, he had no hesitation in inferring that the death had been caused by arsenic. Made no quantitative analysis ; but would estimate the quantity of the arsenic detected by him in the matters examined to have been at least more than 6 grains,—3 or 4 grains of arsenic are sufficient to cause death. If, after a quantity of arsenic was taken, vomiting occurred, the vomiting would tend to carry off a portion of the poison. The arsenic which the witness found, was obtained from the solid tissues of the body, and was, consequently, principally what had been absorbed. Arsenic is an irritant poison ; it produces an irritant effect on the stomach ; this is its usual effect ;—so much so, that even when it is applied externally, it frequently operates in this way. It may also produce pain and tenderness over the whole belly, if the patient lives some time ; in these circumstances there will probably be purging or dysenteric symptoms. A person may recover from the effects of a small dose of arsenic. In lingering cases, or where a person has recovered from the immediate effects, the limbs may be peculiarly affected. The symptoms in that case are of a nervous character,—spasms, cramps, or partial paralysis. Black spots on the inner surface of the stomach are often met with in poisoning by arsenic. They indicate a recent dose. Ulcerations of the ileum would not prove any thing more than that there had been for some time inflammation of the bowels,—this inflammation might have been the result of poison, or it might not. If a poisonous dose of arsenic were given late on Saturday night, death might take place at noon on Sunday. Report of post-mortem inspection, by Messrs Lennox and Craig, having been read to witness, and his opinion having been asked as to the cause of death,—he said he would infer that death had been caused by arsenic. His attention having been called to the symptoms of the case at the outset, coupled with the subsequent affection of the limbs, he was asked, — Are these the ordinary symptoms of any known disease ? They are not. In regard to the symptoms on the morning of 21st June, witness was asked, If arsenic had been given at six or seven o'clock the night before, is it probable that its effects would not be manifested before Thursday morning ? and replied that, generally speaking, the symptoms of poisoning by arsenic would appear within an hour ; and he would, therefore, have expected the symptoms to appear sooner than Thursday morning,—but arsenic has been known to be in the system for several hours before it manifested itself.

The cross-examination of Dr Crawford by the prisoner's counsel elicited nothing further of importance. In reply to a question by the court, he stated distinctly his having no doubt that deceased died from poisoning by arsenic.

[We have reported above, we believe with tolerable correctness, the chief points in this case, which are important in a medico-legal point of view. That the immediate cause of deceased's death was the dose administered on the night preceding the Sunday on which she died, there can be no doubt. It is worth while, however, shortly to consider the previous features in her illness, in relation to the evidence of poisoning furnished by symptoms.

The first occurrence of any symptoms referable to arsenic was on the

morning of Thursday, 21st June, when the deceased called for the aid of her mother, who found her vomiting. If she had got arsenic at this time from the prisoner at all, it must have been in her (prisoner's) house, where she had something to eat between six and seven on the Wednesday evening. The question as to whether the onset of symptoms from the arsenic would be delayed so long as till Thursday morning, was very properly replied to by Dr Crawford in general terms. It does not at all appear, however, how long these symptoms were delayed. She was found vomiting on the Thursday morning, and she said she had been vomiting during the night. This sickness was attributed by herself and her friends to bile ; but it is to be noted that the deceased had experienced sensations different from those connected with her previous bilious attacks, for she said that she thought it was bile accompanied by inflammation. The gastro-intestinal irritation gradually declined, till the night of the succeeding Tuesday, when, after getting medicine from the prisoner, she again became worse, exhibiting a renewal of the symptoms of gastro-intestinal irritation. This again partially subsided ; and, during the following days, there occurred the very marked symptom of powerlessness of the legs and arms, which continued more or less to exist up to the time when the fatal dose was undoubtedly given. This powerlessness of the limbs can, we think, be ascribed to nothing else than the effects of a metallic poison. It was not mere general muscular debility. It was to such an extent that her relatives had to help her to draw up her legs in bed. It was accompanied by sensation of coldness in the extremities, although the circulation was so good that the limbs did not feel cold to her mother's hands ; and it came on, and persisted, at a time when her other symptoms were improving. It was, in short, nothing else than true arsenical paralysis ; and, taken in conjunction with the repeated recurrence of other symptoms of poisoning, can lead, we think, to no other conclusion than that she had got several small doses of arsenic before the large and finally fatal one was administered. The ulcers in the ileum were also, we think, most probably caused by these previous smaller doses of arsenic.]

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MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XXIX.—MEETING IV.—*January* 2, 1850.—Dr ROBERT HAMILTON in the Chair.

TREATMENT OF PHTHISIS PULMONALIS.   BY DR J. H. BENNETT.

This communication, in an extended form, will be found among the Original Communications in our present Number, p. 232.

Dr Robert Hamilton had himself been a patient of the late Dr Stewart, and gave the society some account of the system of treatment which that gentleman had pursued with no small success. His system coincided in most important points with that described by Dr Bennett. It embraced, first, a nutritious diet, including milk and animal food ; secondly, counter-irritation, not, however, by means of blisters or irritating ointments, but by diligent frictions, applied to the whole surface of the body, and especially to the chest. Dr Stewart also recommended exercise in the open air on foot, in carriage, or on horseback. He had received a medical education, and was an accomplished

and scientific physician, although at the period when he acquired his reputa-
tion for his treatment of consumption he had become a clergyman. He never
wrote on medical subjects, and although Dr Hamilton once proposed to draw
up an account of his system for publication, the doctor would not accept his
offer. Had he lived at the present day, Dr Hamilton believed that he would
have availed himself of modern discoveries, and that he would have added the
cod-liver oil to his stock of remedies. With regard to the importance of a re-
gulated temperature, Dr Hamilton was inclined to think that exercise in the
open air, with warm clothing, and the use of the respirator, was preferable to
close confinement in the house.

   Dr Wood had been much pleased with the ingenuity of Dr Bennett's com-
munication; and with the practice which he recommended he for the most
part agreed. We were now on the eve of establishing by theory what Dr
Stewart had done by practice. It would seem that the most effectual preven-
tatives against phthisis were those circumstances and remedies which kept the
system up to par; for the proclivity to the disease was induced in proportion
as the energy of the vital powers was diminished. At the same time he could
not admit that Dr Bennett had proved, that it was the mal-assimilation of fat
which was the main cause of the tubercular deposit, or that cod-liver oil acted
in restoring health, simply because it supplied an oily principle which was
wanting. He believed that a depraved digestion was at the root of the evil,
and that any nutritious substance which the stomach could digest would prove
equally beneficial. Now it happened that the cod-liver oil was easily digested,
that a smaller amount of assimilative power will convert it into chyle, and
hence that it was more generally useful than other nutritious substances. He
was not disposed to depreciate the value of acids in certain cases; they were
often useful as tonics, and improved the digestive powers when judiciously
administered. Neither did he mean to state that alkalies were to be con-
demned, or that their use was not more frequently indicated than that of
acids. It must not, however, be supposed that, in order to cure the tendency
to acid secretion, which was so common in cases of phthisis, it was sufficient to
neutralise the free acid in the intestinal canal.

   Dr Macaulay asked Dr Hamilton, whether Dr Stewart used to undertake
the cure of confirmed cases of phthisis with confidence?—and *Dr Maclagan*
inquired, whether over-stimulation had not been known to produce fatal effects
in Dr Stewart's practice?

   Dr Hamilton replied, that although Dr Stewart, of course, believed early
cases to be more sanable than advanced ones, and that, although, in conse-
quence of the imperfection of the means of diagnosis at the period at which he
lived, he may have obtained the credit of curing cases, which were not cases of
tubercular disease at all, yet he applied his system to very many unmistake-
able cases, and with the happiest results. In reply to Dr Maclagan's question,
he repeated, that Dr Stewart was a shrewd, well-educated, and scientific prac-
titioner, who well knew when to pursue, and when to intermit, his plan of
stimulation.

   Dr Bennett was still disposed to maintain, in defence of his theory, that
phthisical patients for the most part loathe the ordinary articles of a nutritious
diet, such as beef-steaks and porter; that neither the administration of acids,
nor of any other remedy, would enable them to digest such food; that neither
starch, nor any other matter without fat, would supply the oily principle to
the chyle, but that the cod-liver oil was to be regarded as the most important
article of diet, inasmuch as it was readily assimilated.

   Dr Seller objected to this application of the term " assimilation," which, he
contended, ought to include the idea of some change upon the article of food in
its passage into the system; but as Dr Bennett conceived the oil to pass into the
chyle as oil, there was in this case no assimilation, properly speaking. Dr
Bennett had not proved that the loss of fat was the cause of tubercle; for his own
share, he believed it to be more commonly the effect of phthisis, than its cause.

Dr Douglas Maclagan, although he fully agreed with Dr Bennett in the general principles of treatment which he advocated, could not subscribe to the theory which connected the deposit of tubercle with the loss of fat. He had himself seen cases in which tubercle had made its appearance in subjects by no means deficient in fat; and, although emaciation afterwards occurred, it was clearly consequent upon the nature of the disease—not its cause.

Dr John Taylor instanced similar cases which he had himself met with.

Dr Bennett remarked, that all his own observations were corroborative of the doctrine, that a wasting of the fat of the body preceded the formation of tubercular deposits. It was, however, necessary to explain, that he was now advocating his own theory, and stating his own opinions. All medical theories had their exceptions; and, although he had met with none himself, yet such observations as had been adduced by Dr Maclagan and Dr John Taylor might certainly be urged against the adoption of his views without limitation.

MEETING VI.—*Feb.* 6, 1850.—Dr J. H. BENNETT, V.P., in the Chair.

VOLTAIC BATTERY FOR MEDICAL USE.

Dr Wright exhibited to the society two new forms of the voltaic battery, for medical purposes. By means of the ordinary electro-magnetic coil machine, it was in our power to administer a rapid succession of shocks, but not to pass a continuous current of electricity through a part included in the circuit. It was probable that some therapeutic effects might result from the passage of a large volume of electricity, in a high state of tension, through the human body; and it was with the view of testing these effects that Dr Wright had constructed the galvanic arrangements now exhibited. The most powerful of these consisted of a number of small glass bottles, charged with a solution of bichromate of potash, acidulated with sulphuric acid, into which were lowered, by means of a simple apparatus, arcs of zinc, tipped at one extremity with platinum. The other variety consisted of small ink-glasses, containing, in a similar solution, carbon (ordinary cinders were used), and pieces of zinc attached to platinum, by means of threads of gutta percha. Members were invited to try upon their own persons the physiological effects of these arrangements, which were stated to be as follow:—1st, On completing the circuit, a shock of great energy; followed, 2dly, by a sensation of warmth in the hands and wrists, when the conductors were grasped; 3dly, while contact was maintained, the current continued to pass, but the subject of experiment was unconscious of its flow; 4thly, on breaking contact, there was a second shock, followed, 5thly, by a repetition of the calorific sensation.

Dr Bennett asked, whether Dr Wright had treated any cases of disease with this new apparatus, and whether he had observed any good results from its use?

Dr Wright explained, that he had not tried the *new* batteries for the cure of disease, but had had considerable experience in the use of the coil machine, and had found it an energetic remedy, both in cases of paralysis from cerebral disease, and in cases of spasms from affections of the spine. He did not mean that the organic lesions were removed, but simply that the symptoms of paralysis and spasm underwent improvement, which was sometimes more than temporary.

Dr Bennett remarked that, according to Dr Wright's views, the galvanic current was capable of fulfilling two opposite indications: it could diminish spasm, and so relieve excessive irritability; or it could remove paralysis—in other words, rouse suspended powers of action. Was it possible to apply the current so as to secure either effect which might be desired?

Dr Seller inquired what reason there was for believing that a continuous current, of low intensity, was likely to prove more beneficial than a succession of shocks? He believed that no satisfactory evidence existed that the slightest

good had ever been effected by the passage of currents through the human body, unless shocks were at the same time administered:

Dr Wright alluded to the remarks of Dr Bennett, and mentioned that some of Matteucci's experiments seemed to show that, when an electric current was passed from the centre to the periphery, an exhaustion of irritability took place; but that an accumulation of irritability seemed to result when the current was sent in the opposite direction. Although he agreed with Dr Seller, that a continuous current of low tension had never been productive of good, he yet entertained hopes that some benefit might result from the continuous passage of a large volume of electricity in a high state of tension. Such was the nature of the current excited by the new batteries which he had brought under the notice of the Society.

Dr Cumming thought that he had observed benefit from the application of the electro-magnetic current in certain cases of ovarian dropsy, and of constipation of the bowels. In cases of the latter description he applied one of the sponges over the sacrum, and moved the other along the track of the colon. The application should be continued for three or four hours at a time.

Drs Carmichael, Spittal, Peddie, and Skae, likewise took part in the discussion.

CASE OF PNEUMO-THORAX. BY W. ROBERTSON, M.D.

C. L., twenty years of age, a sempstress, was admitted into the Royal Infirmary, on the 16th January. From her own statement, it was ascertained that she had for six months suffered from cough and pain in the chest, and that during the week immediately preceding her admission these symptoms had undergone great exacerbation. Further particulars regarding the early history of the case could not be collected, as no friends accompanied her to the hospital, and her state of suffering and exhaustion was such as to prevent her from answering above three or four simple questions.

The symptoms observed on admission were as follows :—There was extreme prostration of strength, langour, inability to sustain attention when questions were put, but no delirium. The respirations were short and hurried, causing pain in the left side of the chest. The patient complained much of want of breath, and of a frequent painful cough without expectoration. The action of the heart was exceedingly rapid, but regular. No pulsation could be felt at the wrist. The face was livid, and the lips swollen; the teeth covered with sordes; the tongue dry, and foul. The skin was bedewed with clammy moisture, and under the natural temperature; no eruption was perceptible.

The patient refused food, but her thirst was very urgent. Her position in bed was on her left side, and she could not, without assistance, change this posture. She had not slept for several days and nights.

The *physical signs* were :—1. Distinct contraction of the left side of the chest, with almost total immobility during the acts of respiration. 2. Percussion sound normal over the whole right side, and over the upper third of the left ; highly tympanitic, even upon the slightest tap, over the middle third of left side from the mamma nearly to the spine; dull from about the sixth left rib downwards. 3. Respiratory murmur puerile on the right side, and mixed with sonorous and sibilant râles; faintly audible in the upper fourth of the left side; in middle third, intensely bronchial, and accompanied both during inspiration and expiration with amphoric buzzing and metallic tinkling, the cough, the voice, and sonorous râles, in the same region, all partaking of the metallic character. No respiratory sound below the seventh left rib.

The position and sounds of the heart seemed normal.

Stimulants and opiates were administered; but the patient died within fourteen hours after her admission into the hospital.

Sectio Cadaveris.—On dissection, the heart was to all appearance healthy. The right lung was rather emphysematous, its outer and lower border presenting a patch of recently effused lymph. Its bronchi contained some frothy

mucus. The left lung adhered very firmly by its upper third to the parietes of the chest, and below to the diaphragm. The upper lobe was contracted, but still contained air, and seemed unaltered in texture. The lower lobe was much contracted, carnified, and void of air. A large cavity had been formed between the thickened surfaces of the pleura, in the left mammary and lateral regions; it contained a small quantity of turbid fluid, and a large quantity of air, which escaped with some violence when the cavity was opened into. At the part of the carnified lung corresponding with the top of this cavity, there was a patch of greenish lymph (?), about the size and shape of a half-crown, strongly resembling a slough, but exhaling no putrescent odour. When the parts were removed from the chest, and immersed in water, and when air was forcibly thrown into the left bronchus with an injecting syringe, it escaped in small bubbles from a minute aperture between the upper edge of the supposed slough and the substance of the lung. It seemed, however, to require some little effort in pressing on the piston in order to effect this rupture, and when the parts were afterwards roughly handled, its dimensions considerably increased.

The nature of the case was made sufficiently obvious by the dissection. A sacculated empyema had found vent, through an ulcerated opening, into the bronchi. The contracted state of the left lung, and of the whole left side of the chest, showed that either this communication must have been formed a considerable time before the patient's death, or that the absorption of the effusion must have been far advanced before the perforation of the lung took place. The immediate cause of death seems to have been bronchitis of the other lung.

I have been induced to bring this case under the notice of the Society, not because it presents any feature of practical or even unusual interest, but because it suggests some reflections upon the significance and mechanical cause of the auscultatory signs of pneumo-thorax—the amphoric and metallic sounds.

The generally received opinion regarding the production of these signs may be stated as follows:—

1. When they are present, it is supposed that there must exist a large cavity in the substance of the lung, or between the surfaces of the pleura.

2. For the production of amphoric respiration, it is deemed necessary that the preternatural cavity should communicate freely with the bronchi, so as to admit of an alternate to and fro rush of air during inspiration and expiration.

3. For the production of metallic tinkling, it is thought essential that there should be both air and fluid within the cavity, the tinkling being due to the explosion of air-bells on the surface of the fluid, to the falling of drops or solid particles from the summit of the cavity, or to the agitation of its fluid contents by rapid movements of the chest, as during the act of coughing.

It may, I think, be assumed that these propositions are subscribed to by most auscultators both in this country and in France.

But it is now fully ten years since Skoda, of Vienna, first called in question the accuracy of these doctrines, and endeavoured to prove that for the production of the metallic and amphoric sounds within the chest, all that is essential is a large cavity, full of air, with parietes capable of reflecting sound, not necessarily communicating with the cavity of a bronchial tube, or containing a single particle of fluid. Although Skoda's highly original work on ausculta-tion was published in 1839, and immediately procured for its author great reputation in Germany, his views have not in this part of the world met with that attention which they deserve; and I am not aware that any English or French writers on pneumo-thorax have even alluded to the mechanism by which he accounts for the production of the amphoric and metallic sounds. As I have myself frequently repeated his experiments, and am convinced of the justice of his conclusions by reflection upon the mechanical and pathological condition of the lung in cases of pneumo-thorax, I venture to lay before the Society a short account of the present state of the theory.

I. Laennec first suggested experiments by which it is in our power to imitate

the auscultatory signs of pneumo-thorax. By simply speaking into a pitcher, or into the bung-hole of an empty cask, we can, without difficulty, produce the utricular or amphoric buzzing, while certain tones of the voice seem to induce a tinkling or metallic echo. Skoda likewise observes, that the metallic resonance accompanies the voice of a speaker in certain rooms, especially if the roof be vaulted. These simple observations sufficiently prove that amphoric and metallic sounds are produced in similar circumstances, and, in fact, bear the same mutual relation as the grave and high tones of a guitar string.

II. If a stomach be removed from the body of an animal, inflated with air, and ligatured ; and if two stethoscopes be applied to its opposite sides, the voice of an individual speaking into one of the stethoscopes will be heard by a person who applies his ear to the other instrument, and will be accompanied with amphoric resonance, with metallic tinkling, or with both. The result will be the same, whether the stomach contains a little fluid, or is filled with *air alone.* This experiment of Skoda seems to warrant the conclusion, that the metallic sounds may be induced in a cavity quite independently of the presence of fluid, or of communication with the air external to its parietes.

It may be safely granted (because it can be physically demonstrated) that the passage of air into and out of a large cavity, through a fistulous opening, the bursting of air-bells on the surface of a fluid which partially fills a cavity, the dropping of any substance into fluid, the agitation of the liquid contents of a cavity by the act of coughing, or by succussion, will induce the metallic sounds ; but it must, I think, be admitted that some, at least, of these causes are necessarily of rare occurrence within the cavity of the chest.

When a quantity of air is interposed between the pulmonic and costal pleuræ, we know that the lung becomes compressed, carnified, and inelastic, as in the case which I have detailed; and we know that the corresponding side of the chest hardly moves during the acts of respiration. The aperture in the lung, by which air has gained access to the pleura, may remain patulous ; but it is far more frequently said to be obliterated, in consequence of the compressed state of the lung, or—as I believe to have been the case with my own patient —it becomes plugged up with exudation. As was remarked at the time of the dissection, considerable pressure upon the piston of the syringe was requisite, in order to clear the passage to the surface of the lung; and the very fact, that air escaped with violence when the cavity was opened, shows that there must have existed during the patient's life an obstacle to the passage of air back through the bronchi during expiration.

Yet in this patient's case, as in many others of pneumo-thorax, the amphoric and metallic sounds were perfectly well marked both during inspiration and expiration—the râles, the cough, and the voice, all partaking of the ringing or metallic character. But, as was ascertained by dissection, the bronchi of the affected lung were surrounded by condensed tissue receiving no air, while their finer extremities were almost totally obstructed, and the movements of the left side of the chest nearly abolished ; it is, then, quite inconceivable that such a to and fro motion of air could have taken place *within* these bronchi as to cause the metallic sounds.

There is, I think, little doubt that Skoda is right in his opinion, that the propagation of sounds to the cavity of the pleura in such cases is effected by the communication of the sonorous vibrations of the breath, of the râles and of the voice, through the parietes of the bronchi to the space filled with air ; and that, when the vibrations reach such a cavity, their intensity is increased, and the metallic character superadded, in conformity with the law of consonance, just as in the experiment above detailed with the inflated stomach and two stethoscopes.

If this principle be admitted, we should expect to hear the metallic sounds in cases of simple pneumo-thorax—*i. e.*, in cases in which gas has been produced within the cavity of the pleura, without perforation—a pathological condition which some are inclined to believe to be purely imaginary, and which

few profess ever to have met with. We should also expect to hear metallic sounds after the operation of empyema, when air has taken the place of the evacuated fluid, and while the orifice is held securely closed. More than one observation seems to favour the supposition, that the amphoric and metallic sounds may be heard in the latter case. I have never myself had an opportunity of confirming these observations, though perhaps some other member of the Society may have been more fortunate.

Dr *Spittal* agreed in many points with the ingenious views which Skoda had promulgated. In one point he had himself anticipated the German auscultator ; for he had distinctly shown that fluid was not requisite for the production of metallic tinkling.

Dr *Bennett* inquired, how Dr Robertson would account for amphoric respiration in large cavities within the lung, and likewise for the same sign in cavities between the surfaces of the pleura not communicating with the bronchi ?

Dr *Robertson* believed that, in cases of pulmonary excavation, the to and fro passage of air in the great cavities sufficiently explained the metallic character of the sounds. When, however, true pneumo-thorax existed, the lung was reduced to very small dimensions, the parenchyma was void of air, and the bronchial tubes, though still in their larger ramifications pervious, led to nothing. Even the pulmonary fistula was often, as in the case just read, obstructed, and the motions of the affected side almost abolished. In such cases there could be no to and fro rush of air, and the amphoric sounds were in these circumstances to be regarded as the laryngeal or tracheal sounds, propagated along the still pervious bronchi, communicated through their parietes to the cavity in the pleura, and there increased in intensity, and it might be altered in character, in conformity with the laws of consonance. The production of bronchophony and bronchial respiration in a thoroughly hepatised lung, or of pectoriloquy in a tubercular cavity, were additional examples of sounds transported from a distance, and acquiring force in their transit.

Dr *Peddie* inquired, whether Dr Robertson meant to deny that air was sometimes effused into the cavities of the pleura and peritoneum, without perforation of the lung, intestines, or parietes ? For his own share he believed that a tympanitic state of the peritoneum was not unfrequently observed after delivery, and he saw no reason to doubt that a similar condition might affect other serous cavities.

Dr *Robertson* doubted the possibility of the pleura secreting gas. When air was found in one side of the chest without evidence of perforation, its presence was probably due to the putrescence of some liquid previously effused.

Dr *Bennett* remarked, that he had opened many bodies, but never found air in a serous cavity without evidence of perforation or of putrefaction.

Some conversation followed upon the differential diagnosis of tympanitis abdominalis, and tympanitis intestinalis.

EDINBURGH OBSTETRICAL SOCIETY.

SESSION IX.

MEETING II.—*January* 9th, 1850.—Dr MYRTLE in the Chair.

A SERIES OF CASES ILLUSTRATING THE CONTAGIOUS NATURE OF ERYSIPELAS AND OF PUERPERAL FEVER, AND THEIR INTIMATE PATHOLOGICAL CONNECTION.

A communication was read to the Society from Dr Hill of Leuchars, detailing a series of cases of erysipelas, and of puerperal fever, which illustrated very strongly the intimate pathological connection between these two diseases. From the cases related, it was evident that the same poison, whatever was its nature, might cause ordinary erysipelas in some subjects, and puerperal peritonitis in child-bearing women, when they were exposed to its influence.

In the month of June 1848, a carpenter, in the village of Leuchars, wounded his hand while making a coffin ; and subsequently, when putting the corpse into it, he felt some fluid from the body come in contact with the wound in his hand. In a few days the hand swelled up, and a severe attack of erysipelas ensued. Soon afterwards, his wife was taken severely ill with a similar attack in the right hand and arm. Both of them ultimately recovered. During their illness, however, their daughter, a young servant girl, in the seventh month of pregnancy, and who had come to their house to be confined, was seized with a feverish attack, for which I prescribed. On my way home, after visiting this girl, I was called to a woman in labour, who was confined in the course of two hours. Next morning the servant girl (the carpenter's daughter) was taken with labour, and soon gave birth to a dead child, whose body had all the appearances of being affected with the same disease as the arms of the mother's parents previously were. She herself never rallied after delivery, but died in the afternoon of the same day, with all the symptoms of malignant puerperal fever. I immediately informed the friends of the woman whom I had delivered the day previously, that I should not again visit her, unless serious symptoms came on, demanding my attendance. On the third day after her delivery, I was sent for, and found her labouring under puerperal fever. She, however, gradually recovered under treatment.

On the 30th August 1849, I was called to see a girl, eight years of age, affected with erysipelatous inflammation of the skin of the right parotideal region. The gland itself was considerably swollen, and there was slight fluctuation in it. After being fomented for a few days, a large quantity of matter was discharged.

On the 8th September, I was sent for to Mrs F., the mother of this child, a strong healthy woman, æt. forty-five, and nearly at the full period of pregnancy. I found the glands at the angle of the jaw slightly swollen, and some erysipelas spreading from over them to the ear. The treatment instituted had no effect. On the morning of the 10th, however, labour commenced, and the erysipelas entirely disappeared during its progress. The infant was born in the course of the afternoon, having its face and forehead completely covered with erysipelas. After two days the erysipelas disappeared ; but again, a week afterwards, it commenced at the vagina, and gradually spreading over the abdomen, carried off the child in a short time. On returning to see the mother on the morning after her delivery, I found that the erysipelas had again returned with violence, over the whole face, which was very much swollen. There was no symptom of peritoneal inflammation. I immediately put her under a course of mercury, ordered a laxative draught, and hot fomentations to the erysipelatous parts, &c. &c. The fever continued severe for a few days, but she ultimately did well.

The midwife who, on the 10th September, attended Mrs F., was called on the following day to wait upon a servant girl, who had come to her father's house to be confined. A healthy child was born. The mother continued to do well till the fifth day, when she had a fit of shivering, was seized with pain in the head, and became feverish. Subsequently, she became affected with most violent diarrhœa, from which she ultimately recovered.

The father of this girl, an infirm old man, watched over her anxiously for three days of her illness, when he himself was seized with a fit of shivering, and became feverish. He complained much of pain in the throat, and difficulty of swallowing. The fauces and palate were of a deep red colour, and there was considerable swelling at the right side. Next day the right parotid gland was much swollen, and an erythematous blush appeared over it, which gradually increased to erysipelas of the whole face. The accompanying fever was of a low type, and in spite of the assiduous administration of stimulants, the poor man sunk on the ninth day of the attack.

Another daughter of this man, who had been in constant attendance on him and her sister, was seized with erysipelas, commencing at the ankle, and spread-

ing upwards as far as the knee. Under some simple treatment she rapidly recovered.

The midwife who had been in attendance on the two cases of labour just related, was, on the 16th September, herself seized with shivering, and the right arm became painful and very tumid. On the third day the glands in the axilla were much swollen up and inflamed. Leeches and hot fomentations were applied, and gave considerable relief, but an abscess formed and was opened. She soon recovered.

In the end of September, the nurse who took care of Mrs F. after the midwife had left her, was taken ill on the third day after Mrs F.'s confinement. She was seized with shivering and pain in the middle finger; afterwards, on visiting her, I found the veins of the fore-arm inflamed, the course of each vessel being traceable by a deep red line. After a short time violent erysipelas commenced at the hand, and extended up the whole arm. Matter was formed and discharged in great quantity through deep incisions which were made in the arm. She ultimately recovered.

The woman who attended this last patient was seized with shivering and sore throat. On examination, the fauces were found of a deep red colour, and the glands much swollen, but not inflamed. The accompanying fever was of a low typhoid type. This woman also ultimately recovered.

UNAVOIDABLE HEMORRHAGE.

Dr Keiller communicated the following case of unavoidable hemorrhage which he had seen along with one of the pupils of the Maternity Hospital, and which he considered interesting on account of the unusual mode of separation, and extent of laceration, of the placenta.

Ann M'Donald, aged 32, the mother of six children (all of whom died of cholera within one month, in Ireland), first experienced a slight discharge about four A.M. of the 14th. Notwithstanding this, and other symptoms of approaching labour, she walked out of doors the whole day selling sticks. About seven o'clock in the evening a copious discharge again took place, which was followed by another about one A.M. of the 15th. Several " gushes " of hemorrhage afterwards occurred, and that to such an extent, as to induce great faintness, and on one occasion, total pulselessness. In the interval, between these repeated attacks of excessive hemorrhage, there were no pains experienced, they being only slightly felt at the time of each discharge. Dr K. visited her on the 16th, and, on examination, found the soft and spongy placental mass distinctly presenting, but the os uteri in a very undilateable condition. The progress of the case was, however, afterwards closely watched with the view of safely completing the delivery, either by extracting the presenting and partially detached placenta, or otherwise conducting the case, as circumstances might demand ;· but, as the pains and consequent hemorrhage in a great measure disappeared until five A.M. of the 18th, when the membranes ruptured, and the liquor amnii became suddenly discharged, no interference was called for, the head ultimately becoming the presenting structure, and the placental mass apparently simultaneously receding from its original position over or near the os uteri. About seven A.M. the birth of a living and full grown male child was naturally accomplished, the detached placenta following almost immediately. On examination, the placenta was found to present an irregular and very deep fissure or rent, extending across its centre, from one edge to the other, and completely filled by a large quantity of coagulated blood.

Dr Keiller stated, that he had repeatedly witnessed cases of placenta prævia, and carefully examined the detached portions, or sources of the hemorrhage, together with the amount of adherent clot, but had never before seen a case at all resembling the present, either in the extent of the one or the quantity of the other.

[The report of the third meeting of the Obstetric Society is unavoidably postponed till next month.]

REPORT ON CHOLERA IN SCOTLAND, 1848-9.

KILMARNOCK, AYRSHIRE.—(*From Alexander Hood, Surgeon.*)—[The following details are not confined to the recent epidemic ; but we are induced, from their interesting nature, to insert them in this place.] In 1832, the epidemic appeared in Kilmarnock on the 8th or 9th of July. Prior to this date Paisley had been suffering for several weeks severely from the pestilence ; and communication was kept up between the two places by means of a van or covered cart, which passed alternate nights in Paisley and in Kilmarnock, being, in the latter place, quartered at a small house near the back of the church-yard. It so happened that a daughter of the landlord of this house, about fourteen years of age, had been induced, by a quarrel with her mother, to take up her quarters in the van for some hours, and in this situation, about three or four in the morning, she was seized with cholera. She was attended by Dr Crooks, and ultimately recovered. Dr Crooks himself was seized in the morning, or early in the forenoon ; he was attended by the writer of this article ; by two o'clock P.M., he was considered out of danger, and had a good recovery. The driver of the van was seized at Stewarton, on the way to Paisley, in the forenoon, but whether he recovered or not, I do not know. Several of the persons who visited the girl first attacked, were seized with cholera. For the first few days it was confined entirely to the locality, and seemed to attack individuals who had approached her person, or came into the house in which she was. Thus, the first fifteen or twenty individuals that were attacked might all have been traced to the person of the girl who was first seized, but the disease spread so rapidly that the link of connection was soon lost. The epidemic was in the town about three months, and in that time it carried off about two hundred and fifty of the inhabitants.

In 1848-49, J. M., farmer, Gruger-Mains, about sixty years of age, was the first person that fell a victim to Asiatic cholera in this parish. It was reported that he had over-heated himself in a hay-field on the day previous to the attack, and partaken freely of broth at dinner ; be this as it may, he was seized about three A.M. on the morning of the 15th August, and died at eight o'clock P.M on the evening of the 16th. There was no reason to suppose contagion or infection of any kind, nor was it followed by any member of his family or attendant being infected with the complaint. J. M., the second person who was seized, became ill at a quarter to eight o'clock on the morning of the 16th of December 1848 ; he had no medical assistance till two o'clock P.M., when he was getting into the stage of collapse. He died at a quarter to seven o'clock next morning, in the eighty-second year of his age. The disease, in his case, probably arose from malaria. His house was damp—a small run of water passed through the entrance to his dwelling, and a large cess-pool behind his premises, from which he had made a sink to receive the moisture from it. He had been engaged most of the day previous to the attack, in taking up the putrid filthy liquor from the sink, and applying it to the fruit trees in his garden, and gooseberry bushes, &c. His daughter acted the part of a nurse to him, and was herself seized on the morning of the 13th, but had no medical assistance till evening. She had rice water dejections, the whispering voice and suppressed urine, from Thursday till Sunday morning. She recovered. The grand-daughter of the old man had premonitory symptoms, and also a nurse who attended them. By adopting prompt measures they all got well. A child died in an adjoining house, as it was reported, from cholera. Some of their neighbours were also troubled with bowel complaint. There were no more well authenticated cases in town till towards the latter end of January 1849, when the surrounding villages had mostly been affected,—viz., Newmills, Galston, Hurlford, Crookedholm, Riccarton, and Eglinton iron-works. At this time, Kilmarnock, being in some measure surrounded by the pestilence, was inoculated, so to speak, in all its most vulnerable districts—for example, in the localities in which typhus fever had prevailed during last year. The following were remarkable instances of this fact :—A girl, of the name of Kirkhop, arrived in Kilmarnock

from Galston—an infected village—on the 19th of January. Dr Borland was in attendance on the morning of the 21st. She recovered, after being collapsed five hours. One of the nurses who had attended her died of cholera. The second nurse had premonitory symptoms. The man whose house the girl Kirkhop came to take charge of, was seized with cholera, and several of his children subsequently suffered. A man, named Silverage, was seized on the 23d January last, at Eglinton iron-works, came home here, and slept with his wife. She was seized with cholera the second day after his arrival. His daughter, who slept in an adjoining bed, was also seized. Silverage lived four weeks. His wife and daughter both recovered.

The first two cases of cholera in Galston, near Kilmarnock (both children), occurred on the 14th January, and in each house one of the parents died. The fifth case was William Young, a farm-servant who had been sent by his master to bring home a cart of turnips from a field a little below Galston. He was taken very ill in the field, or on the street on his way home ; and was taken into a house in Titchfield Street—a small garret-room, in which were collected nine or ten people who had been drawn together, partly by curiosity, and partly from an interest which they felt in the young man's case. All these nine or ten people took their turn alternately in rubbing him with hot salt, with the view of restoring the heat of the body, and promoting circulation. The lad died in the course of five or six hours' illness. The medical gentleman in attendance stated to me, verbally, that all the nine persons who took their turn in rubbing him, were seized with cholera, and seven out of the nine died. The number of nurses that were engaged to attend on cholera patients in Kilmarnock, has not been precisely ascertained, but of the ten which have come to my knowledge, all had symptoms of the disease—four recovered, and six died. From a general review of the whole subject, we are almost forced into the belief that cholera, like most other diseases, is both epidemic and contagious or infectious.

[We regret that our limited space obliges us to omit a large number of instances of communication of the disease to those in the neighbourhood of the sick, with which we have been kindly favoured by Mr Hood, selecting from his report only such as appear to bear most strongly on the question of contagion, without being open to the usual objections.]

VARIETIES.

Royal Infirmary.—The appointment of physician to the institution, vacant by the resignation of Dr George Paterson, has been filled up by the election of Dr Thomas Wright.

Royal Medical Society.—The excavation for the foundation of the New Surgical Hospital has been already commenced ; and we trust that the demolition of some of the old buildings in Surgeon Square will soon be effected. It is said that the hall of the Medical Society will, probably, be soon removed ; and that the new hall will be built in some part of the hospital grounds. A change of premises would be greatly for the benefit of the Medical Society, and has, in fact, been often suggested by the increasing dimensions of its valuable library.

Royal College of Surgeons of Edinburgh.—A Bill has been introduced into the House of Commons, by the members for Edinburgh, to enable her Majesty to grant a new Charter to the College, in lieu of the existing charter confirmed by Act of Parliament ; to provide for bringing to a close the existing scheme for raising a fund for a provision for the widows and children of the members of the College and their clerk ; and to make provision for separating the College from the incorporated trades and municipal corporation of the City of Edinburgh. The bill relates only to the internal regulations of the College, and does not in any way concern the granting of licenses, or conducting of examinations in surgery.—*Lancet.*

NAVAL AND MILITARY MEDICAL HONOURS.—Sir De Lacy Evans has a notice of a motion on the books of the House of Commons, to ask the First Lord of the Treasury the result of the consideration of Government, promised during last session, respecting the conferring the military class of the Order of the Bath on medical officers who may have been present, and proved deserving, in important naval and military actions.—*Medical Times*, Feb. 16, 1850.

KINESIPATHY.—A new kind of charlatinism, which bids fair to prove a formidable rival to homœopathy, hydropathy, isopathy, &c., has lately been introduced into London, under the name of kinesipathy. The great founder of this system of treatment was a Swede, named Ling, who, for genius and originality, is spoken of by his disciples as having been equalled only by Hahnemann and Preisnitz. He founded a school of gymnastics in Stockholm, which was supported by a grant from the Swedish government, in 1813. This royal institution still exists ; and there Augustus Georgii, the introducer of Ling's system into London, was educated. The treatment consists in producing various active and passive movements, which are remarkably well adapted to call different series of muscles into play. In short, the " system " is nothing more or less than what has long been practised in various gymnastic institutions, somewhat extended and methodised. We have no hesitation in saying that medical practitioners might derive some very useful hints from a study of kinesipathy, although the manner in which it has been brought forward as a " system," and its claim, like similar quack methods, to cure all diseases incident to humanity, must operate to its disadvantage with the profession.

EXPULSION OF A FŒTUS BY THE MOUTH.—The Spanish journals relate the case of a young woman, who, during the second period of an attack of yellow fever, vomited, after repeated efforts, a mass, which was recognized to be a fœtus of about four months' growth, and which was shortly followed by the placenta ! The patient died next day. On post-mortem examination, there was found a uterus augmented in volume, and, between the vagina and uterus an abnormal cavity, communicating with the bowel (which ?) by an opening of four inches in diameter.—*L'Union Médicale*, 16th February, 1850.

The *Prague Quarterly Journal of Medicine* has ceased to appear,—its editor, Dr Halla, now resides in Vienna. The journals, edited by Rosas and Heller, have been also discontinued, so that the only Viennese medical periodical is that published by the Imperial Society of Physicians.

ARAB MEDICINE.—M. Gläezel saw an Arab doctor use a strange remedy to cut short a threatened paroxysm of ague. The sensation of cold having commenced, he tied a ligature round the patient's neck till the man fell down, overpowered by the obstructed cerebral circulation, and half asphyxiated. The operator then proceeded to resuscitate his victim, by throwing water in his face, and shaking him. The paroxysm was checked, but the succeeding ones were unusually violent.—*L'Union Médicale*.

BOOKS RECEIVED.

On Subacute Inflammation of the Ovaries and of the Fallopian Tubes, as one of the Causes of Functional Sterility. By Edward John Tilt, M.D.—(Reprinted from the London Journal of Medicine.) London : 1849.

Further Observations on Chloroform in the Practice of Midwifery. By Edward W. Murphy, A.M., M.D.—(Originally published in Monthly Journal.) London : 1850.

Medical Topography and Diseases of Guinea. By William F. Daniell, M.D., Assistant-Surgeon to the Forces. London : 1849.

The Pathology of the Kidney in Scarlatina. By James Miller, M.D. London : 1850.

A Treatise on the Inflammations of the Eyeball. By Arthur Jacob, M.D., F.R.C.S. Dublin : 1849.

NOTICES TO CORRESPONDENTS.

A Communication has been received from Dr P. B. HISLOP of Govan, near Glasgow. Other Communications, with which we have been favoured, have been privately acknowledged.
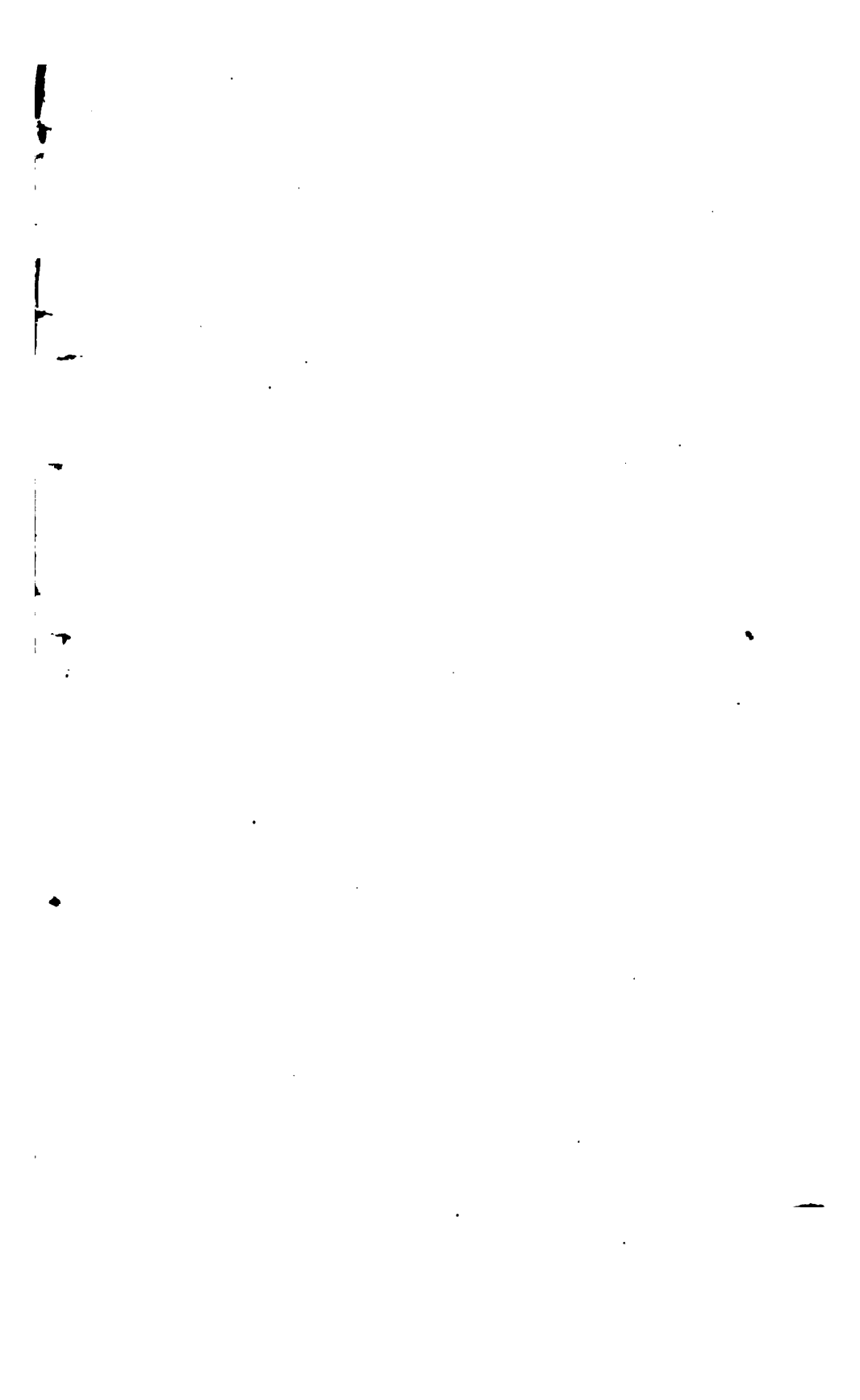
Fig. 1.

Fig. 2.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Cases of Congenital Cataract, with Imperfect Development of the Lenses.* By WILLIAM WALKER, Surgeon to the Eye Dispensary of Edinburgh.

CONGENITAL cataract is a disease not unfrequently met with; but congenital cataract, presenting the peculiar condition of the lenses, which I am about to describe in the following cases, is, I think, rare; at least, in the course of my reading, I do not recollect to have seen it mentioned; and I have, in my practice, met with only two cases of it.

CASE I.—Mr F. Q. W., æt. 20, tall, thin, and delicate-looking, consulted me in January 1849 for an affection of his eyes. His general health had never been robust, and he had been subject for several years to frequent pains in his chest. On examination, I found that there was a large prominence on the left side of the sternum, distinct hypertrophy of the heart, some trace of former pericarditis, and a phosphatic deposit in some of the joints.

When eight years of age, he received, on the left supra-orbital region, a severe blow from a stone, which cut through the upper eyelid. When twelve, some gunpowder exploded in his face, but merely singed his hair and eyebrows. At ten years of age, his sight, with both eyes, was observed to be very much impaired,—as much so, indeed, as it was when I saw him; at the same time, both irides were discovered to be very tremulous. He could read with comparative ease at a distance of five inches; but with the left eye he frequently saw two objects at the same time, the false object being always towards the left side; and when the object looked at was a book, it was the false page which he read. Black spots and wavy lines appeared to be constantly floating in the field of vision, accompanied at times with dull red, orange, and greyish-white spots; when the sun was bright, he saw all the prismatic colours as if falling from it in short curved lines; when reading, there appeared to be a constant dull mist between his eyes and the book, and in a short time the eyes became much fatigued. Convex glasses rendered the vision worse; but with a No. 10 concave, he saw a little clearer with the left eye; while, to produce the same effect on the right eye, he required a No. 12; neither, however, improved vision very much.

On examining the eyes, the first thing which attracted my attention, was the tremulous state of the iris in both; this gave them exactly the appearance which the eyes of those have, who have been operated on for cataract, and made me think, at first sight, that the lenses might be wanting. On exposing them to the influence of light, the iris in both was found to be lively and active in its movements, and the pupillary margin sharp and clear. The colour of the iris was grey. The anterior chambers were of their natural size, and there

did not seem to be any opacity, either in the lens or deeper seated, at least that could be detected when the pupils were in a quiescent state. The globes were of their usual shape and firmness.

When the eyes were examined catoptrically with a lighted candle, only the corneal image could be seen; there was neither deep upright nor inverted image.

On dilating the pupils fully with atropine, and then examining the eyes with the aid of a powerful condenser, a very slight greyish mist or opacity was seen to occupy the position of the lenses. In colour this opacity resembled a drop of very slightly turbid water on a black ground; it was evidently seated in the lenses themselves, and occupied their whole extent. The lenses, however, did not as usual fill up the whole space behind the pupils. They appeared to be fixed to the ciliary processes above and towards the outer sides; while towards the inner and lower sides, they were free, and had this free edge turned a little backwards, so that it was at a greater distance from the posterior surface of the iris, than the centre or upper edge which lay close to it—in fact almost touching it. Through the clear portion of the pupil below, and on the inner side of the opaque lenses, he could see a very little better. Both lenses had a very slightly tremulous motion when the eye was moved rapidly about. The appearance of both eyes is represented in Fig. I., the pupils being under the influence of atropine. No treatment was adopted.

CASE II.—J. K., æt. 25, a stout, healthy young woman, came under my care in November 1849. Ever since her infancy she has had imperfect sight; and although able to work at both in and out-door occupations, she could never read when the book was held at a greater distance from the eyes than eight inches. She could always see best when looking directly forwards. Six months ago the vision with both eyes became so much worse, that she could neither work nor read, and was in consequence obliged to leave her situation. She could, however, manage to go about tolerably well when using the right eye, but very imperfectly when the left was employed. Glasses did no good.

As in the former case, the first thing which arrested attention, was the very tremulous state of the iris in both eyes, which looked as if it had no support behind. The eyes themselves were of their usual size and shape, and of their natural firmness. The irides were of a waxy brown colour, and they acted well. The left pupil dilated rather more fully than the right, but even when a strong solution of atropine was used, neither dilated so fully as they generally do. On looking very carefully into the pupils, a very slight greyish opacity could be seen, but indistinctly, unless a considerable body of light was thrown upon the eyes. The opacity resembled in colour a drop of turbid water, having a slightly greenish hue. On holding a lighted candle before the eyes, no inverted image could be seen, and the deep upright image was very faint and indistinct.

When the pupils were dilated as much as possible with atropine, the lenses were brought fully into view, and instead of their being of their natural form and size, they presented the appearance represented in Fig. II., with a clear space at their inner and lower edges, and through which she saw considerably better. Both lenses looked as if they had been arrested in their development, the left being rather larger, and also rather more opaque than the right, which accounted for her less perfect vision with that eye. The opacity of both was uniform throughout, and not very dense. They were apparently adherent at their upper and outer edges to the ciliary processes; their centres lay in close contact with the posterior surface of the iris, while their inner and lower edges, which were quite free and sharp, were turned backwards away from the iris. They moved backwards and forwards a little when the globe was moved like a flap or valve.

An operation for the removal of the lens, which was performed on the left eye of this patient at two different times, proved quite unsuccessful. This however, I will again refer to in the sequel.

On a review of the foregoing cases, several points present themselves for consideration.

In the first place, Was the disease congenital ? We have no distinct evidence that it was; but I believe that it did exist from infancy, for in both vision was very imperfect from a very early age: in the first, the imperfection was discovered when he was only ten years old, or at that time when the eyes were more particularly occupied in the contemplation of minute objects, in the course of his education; in the second case, vision was very imperfect from infancy; and the opacity in both was so slight and so difficult of detection, that it might easily have existed from birth, without attention being directed to it, both patients being able to go about with comparative ease; and it is, I think, very rarely that we see the lenses becoming opaque in early life, unless they have been so congenitally.

In the second place, How was it that the lenses did not occupy their natural position, and fill up the whole of the space behind the pupil? This, I confess, is a difficult question, and can only be answered on the supposition, that from some cause or other, with which we are unacquainted, they had been arrested in their development, —at least I can give no other explanation of it.

One peculiarity, which was better seen in the second case than in the first, was, that the lenses in both eyes did not seem to be contained in any capsule ; they presented exactly the appearance which the lens does when it is removed altogether from the eye, and the most careful examination failed in detecting any appearance of capsule. Had the capsule been present, we would have had it almost certainly opaque at one point or other, probably throughout; for in congenital cataract, both lens and capsule are usually opaque. No opacity, however, existed.

In the third place, Were the lenses, at their upper and outer edges, adherent to the ciliary processes or not? This question cannot easily be answered, as the pupils could not in either case be dilated so fully as to bring the whole body of the lens into view. That they were adherent to some part or other behind the iris, and that part pretty near the junction of that membrane with the ciliary body, was proved by the first operation which I performed on the left eye of the second patient, in which I introduced a needle through the sclerotic in the usual way, brought it in front of the lens, and then tried to depress it. This I utterly failed in accomplishing; the lens could not be moved from its situation ; it could be pushed backwards, exactly like a valve, but it could not be made to descend.

In the fourth place, What was the state of the lens itself? On attempting to break up the lens at my second operation, the sensation communicated, when the needle passed into its substance, was, that it was of the consistence of firm curd; and here another peculiarity manifested itself,—not the smallest portion could be separated from the body of the lens ; and the lacerations which were made in

it by the point of the needle closed up again completely as soon as the instrument was withdrawn from the eye; and the day following the operation no trace of a wound in the lens could be discovered; the eye was exactly in the same state that it had been in previous to the operation. This shows a state of the lens quite different from what we meet with in cases of ordinary cataract.

In the fifth place, the tremulous state of the iris may, I think, easily be accounted for by the lenses not occupying their usual situation, and so giving support to the iris behind. We generally find that the iris becomes tremulous when the lenses have been removed either by accident or by operation; here neither of these occurrences had taken place, but the lens was small and drawn away to one side, —consequently the iris, particularly at its lower and inner side, had a much larger space to move in than it ought to have had; and it was at this part that the tremor was principally observed.

Lastly, these cases show the importance of making a very careful and minute diagnosis in affections of the lens, as they may easily be passed over or mistaken for other diseases. In the first case, from the imperfection of vision, the tremulous state of the iris, the want of the deep upright and the inverted images, and there being no appearance of any opacity behind the pupil, I had almost come to the conclusion that the lenses were wanting; it was only on dilating the pupil as fully as was possible with atropine, and then throwing in a strong body of light with a powerful condenser, and examining the eyes in various lights that the opacity became visible. In the second patient the diagnosis was not so difficult, as, from the history of the case, the greater opacity of the lenses, and from having seen the former case, I was in a manner prepared for it, at least for an opacity, but certainly not for the peculiar state of the lenses which was brought into view when the pupils were dilated.

47, Northumberland Street, February 1850.

ARTICLE II.— *On Typhoid and Typhus Fevers,—An Attempt to Determine the Question of their Identity or Non-Identity, by an Analysis of the Symptoms, and of the Appearances found after Death, in Sixty-six Fatal Cases of Continued Fever, observed at the London Fever Hospital from January* 1847 *to February* 1849. By W. JENNER, M.D., Lond., Licentiate of the Royal College of Physicians, Professor of Pathological Anatomy in University College, London.—(*Concluded from p.* 123.)

FOR the purpose of clearly estimating the value of the differences in the symptoms and lesions of structure analysed in the preceding papers, it will be necessary here briefly to recapitulate those differences.

Age.—Typhoid fever was limited, in the cases here considered, to

persons under 40 years of age; nearly one-third of the forty-three cases of typhus were more than 50 years of age.

Mode of Attack.—As a general rule, the attack of typhoid fever commenced more insidiously than that of typhus fever. This observation, like all others in this paper, applies, of course, only to fatal cases.

Duration.—The average duration of the fatal cases of typhoid fever was 22 days. Of the fatal cases of typhus fever, 14 days. Half the cases of typhoid fever survived the 20th day of disease. Not a single case of typhus fever survived the 20th day of disease.

Eruption.—The difference in the appearance of the eruption in the two diseases was as great as it well could be, considering that both were of a reddish hue.

Miliary Vesicles, or Sudamina.—These vesicles were present in an equal proportion of the cases of both diseases under 40 years of age. But in no cases of typhus fever, more than 40 years of age, were they detected.

Subsequent experience leads me to believe that miliary vesicles are rarely seen on individuals more than 40 years of age; and very rarely indeed, if ever, on patients more than 50 years old. I have during the last year—*i. e.*, since my attention was directed to this point—seen these bodies on no one of the many patients more than 50 years of age, labouring under various diseases, that have come under my observation.

Expression, Manner, Hue of Face, &c.—As the rule, in the cases of typhoid fever here analysed, the expression was much less indicative of prostration, and more anxious, than in the cases of typhus fever. In the former disease, the complexion was tolerably clear, and the flush, when present, was of brightish pink colour, limited to one or both cheeks, and often distinctly circumscribed. In typhus fever, on the contrary, the complexion was thick and muddy, the flush of the face uniform, and of a dusky red colour.

Headache was a constant symptom in all the cases of typhoid and typhus fevers; but it disappeared by about the 10th or 12th day in the latter, and not till the termination of the second, or middle of the third week, in the former.

Delirium commenced in three only of ten cases of typhoid fever before the 14th day; while it began in fourteen out of fifteen cases of typhus fever before the 14th day. As a rule, the delirium was decidedly more active in typhoid than in typhus fever.

Somnolence.—In eight out of nine cases of typhoid fever, somnolence commenced after the 14th day of disease. In seventeen out of eighteen cases of typhus, before the termination of the second week.

Coma-Vigil.—One-fifth of the cases of typhus fever experienced coma-vigil; not a single case of typhoid fever experienced that condition.

Spasmodic Movements were nearly equally frequent in the two diseases.

Retention of Urine, and Involuntary Discharge of Urine and Stools, occurred with equal frequency in the two diseases; but at a much earlier date in typhus than in typhoid fever.

Loss of Muscular Power.—Little more than a fourth of the patients attacked with typhoid fever kept their bed entirely before the 7th day of disease. All the patients affected with typhus, whose cases are here considered, took altogether to their beds before the 7th day of disease.

The prostration was rarely so extreme in the cases of typhoid fever as in those of typhus fever. Extreme prostration, when it did occur in typhoid fever, was not observed till from the 14th to the 30th day, while in a large majority of the cases of typhus fever it was marked between the 9th and 12th day of disease.

Epistaxis was present in five of fifteen cases of typhoid fever—in not one of twenty-three cases of typhus fever.

Hearing was equally and similarly affected in the two diseases.

Eyes.—The conjunctivæ were *very much* more constantly and intensely injected in the cases of typhus than in those of typhoid fever; the pupils were absolutely larger than natural in a majority of the cases of the latter disease, while they were abnormally contracted in a large majority of the cases of the former affection.

Tongue.—Although individual cases of the two diseases may have closely resembled each other in the appearance of the tongue, yet, taking the whole of either group of cases, this organ presented a singularly different aspect in the one from what it did in the other. It was much more frequently moist throughout the disease in typhoid than in typhus fever. When dry, it was often red, glazed, and fissured, in the former; rarely so in the latter. Again, in typhoid fever, when the tongue was brown, its hue was much less deep—it was of a yellowish, instead of a blackish, brown. The small dry tongue, with red tip and edges, smooth, pale brownish-yellow fur, fissured—the surface seen between the fissures being deep red—may be considered differentially as a diagnostic sign of typhoid fever. One only of twenty patients affected with typhoid fever, but eight of forty patients labouring under typhus fever, were unable to protrude the tongue when bidden.[1]

Intestinal Hæmorrhage occurred in one-third of the patients affected with typhoid fever—in none of those suffering from typhus fever.[2]

The other abdominal symptoms and signs need no recapitulation.

Appetite and Thirst.—No difference in the two diseases.

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[1] This clearly indicates the difference in the amount of prostration in the two diseases.

[2] I may remark that, in one case only of typhus fever, received into the London Fever Hospital during the last three years, has blood passed from the bowels. The case referred to was that of an old man, who had hæmorrhoids, which occasionally bled when he was in health. During the time specified, notes of near 2000 cases have been taken.

Pulse.—The frequency of the pulse fluctuated much more, from day to day, in the cases of typhoid than in those of typhus fever.

Cough and Physical Chest Signs.—Sonorous râle was very much more frequently present in the cases of typhoid than in those of typhus fever—*i. e.*, it was present in eleven out of twelve cases of the former, and in seven only of twenty-one cases of the latter. Dulness of the most depending part of the chest, from intense congestion of the lung, was observed in nine cases of typhus fever—in no case of typhoid fever.

Sloughing appeared to be nearly equally frequent in the two diseases.

Erysipelas occurred in seven of the twenty-three—*i. e.*, in nearly a third of the cases of typhoid fever; in two only of the forty-three cases of typhus fever—*i. e.*, in less than one-twentieth of them.

Cadaveric Rigidity ceased much more quickly in the subjects dead from typhus fever than from typhoid fever.

Discoloration of the Walls of the Abdomen, and of the Skin covering the larger Veins, was much more frequently present in those dead from typhus than typhoid fever.

Emaciation had made greater progress in the typhoid than in the typhus subjects.

Spots.—The spots observed during the progress of the cases of typhus fever continued after death; no trace of the spots visible during life could be detected after death from typhoid fever.

Head.—After typhoid fever, the pia mater and arachnoid separated from the convolutions with abnormal facility in one only of nine cases examined with reference to the point. The vessels of the pia mater were abnormally filled with blood in one-third of the cases, but intensely congested in one only of fifteen cases; the cerebral substance was congested in one-seventh of the cases. After typhus fever, the pia mater and arachnoid separated with abnormal facility in nine of eleven cases of which notes on the point were made. The vessels of the pia mater were congested in nearly half, and intensely congested in one-fifth, of the whole of the cases; while the cerebral substance itself was abnormally congested in half.

Hemorrhage into the Cavity of the Arachnoid, which was not found in a single case of typhoid fever, had occurred before death in one-eighth of the cases of typhus fever.

The amount of serosity found within the cranial cavity was decidedly greater after typhus than typhoid fever.

Pharynx.—After typhoid fever, this organ was found ulcerated in one-third of the cases. After typhus fever, ulceration of the pharynx was not detected in a single case.

Larynx.—Ulceration of the larynx was found in one of fifteen subjects dead from typhoid fever—in one of twenty-six from typhus fever.

Œsophagus.—After typhoid fever, ulcerated in one of fifteen cases in which it was examined. After typhus fever, the œsophagus was

free from ulceration in all the twenty-four cases in which it was examined.

The epithelium separated from the œsophagus spontaneously at an earlier period after death from the latter than the former disease.

Stomach.—In none of the fifteen cases examined after death from typhoid fever was the mucous membrane of the stomach softened throughout its whole extent; in no case did softening of the cardiac extremity approach perforation. In four of thirty-seven cases of typhus fever the whole mucous membrane of the stomach was softened; and in four others there was such extreme softening of the whole of the coats of the great *cul-de-sac*, that they were perforated by the slightest violence.

Small Intestines and Mesenteric Glands.—The presence or absence of lesion of these organs was the ground on which the cases of typhoid and typhus fever here analysed were divided from each other,—consequently they were invariably diseased in the one and normal in the other.

Large Intestines.—After death from typhoid fever, the mucous membrane of the large intestines was found ulcerated in rather more than a third of twenty cases. In no instance after death from typhus fever.

Peritoneum.—As peritonitis was in typhoid fever secondary to, and dependent on, the entero-mesenteric disease, it may here be excluded from consideration.

Spleen.—This organ was enlarged in all the cases of typhoid fever —softened in one-third of the cases only. Before the age of 50, it was as large after typhus as typhoid fever; after that age, it was decidedly smaller in the former than in the latter affection. After the age of 50, it was as soft in typhus as in typhoid fever; before that age, it was less frequently softened.

Gall-Bladder.—There was ulceration of the lining membrane of the gall-bladder in one of fourteen cases of typhoid fever; in none of thirty-one cases of typhus fever. In the latter disease the bile was much thicker, and of a darker green colour, than in the former.[1]

Liver, Pancreas, Kidneys.—These organs were more flabby in the cases of typhus than in those of typhoid fever.

Urinary Bladder.—This viscus was ulcerated in one of the cases of typhoid fever—in none of the cases of typhus fever.

Pericardium.—This cavity contained a small amount of yellowish transparent serosity in all the cases of typhoid fever examined. The contained serosity was red, from transudation of a solution of hæmatosin, in five of thirty-one cases of typhus fever, in which the pericardium was examined before the termination of the fever.

Heart.—The muscular tissue of this organ was much more fre-

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[1] The condition of the bile, as found after death in these two diseases, is worthy of more careful investigation. The difference in appearance is, in a large majority of cases, well marked.

quently and decidedly flabby, and its lining membrane was much more frequently and deeply stained of a dark red colour, in the cases of typhus fever than in those of typhoid fever.

Lungs.—Granular and non-granular lobular consolidation were very frequent in the subjects dead from typhoid fever—rare in those dead from typhus fever. The reverse was the fact with reference to consolidation from congestion of the most depending part of the lung.

Pleura.—Recent lymph or turbid serosity was found in six of fifteen cases of typhoid fever—*i. e.*, between half and one-third, or in the proportion of 40 per cent. The same lesions, but much less in amount, were found in two only of thirty-six cases of typhus fever—*i. e.*, one-sixteenth, or in the proportion of 5·5 per cent.

The particulars here briefly recapitulated, and still more those fully detailed in the foregoing papers, appear to me to prove indisputably that the symptoms, course, duration, anatomico-pathological lesions, and the tendency to cadaveric changes, are different in typhoid fever to what they are in typhus fever.

To account for the differences in symptoms which exist in continued fever, with and without entero-mesenteric disease, the two following assertions have been put forward :—

1st. That typhoid fever is merely typhus fever complicated with lesion of a particular organ; and therefore it is to be expected that certain symptoms referable to, and dependent on, that lesion will be present, and so far modify the symptoms of the disease. If the symptoms and signs referable to the intestinal disease as a cause—*i. e.*, the condition of the tongue, the diarrhœa, increased resonance, and fulness of the abdomen, gurgling in the iliac fossa, pain and tenderness in the same region from the fluctuation of the contents of the bowels—were the only symptoms by which typhoid fever was separated from typhus fever, although the idea might cross the mind that they were two diseases, no sufficient ground for their separation would be present, unless the specific cause of the one was proved to be different from that of the other. But, putting aside the symptoms strictly referable to the abdominal lesion, the general symptoms of the two diseases, in the cases here analysed, differed widely; such differences having no apparent connection with the local affection, but being probably, like it, dependent on some common cause acting on the whole system simultaneously.

Thus the remarkable differences in the kind, not simply amount,[1] of the rash in the two diseases; and the tendency to local inflammations, to erysipelas, and to ulceration, observed in the cases of typhoid fever here analysed, cannot, with any show of reason, be considered to have been dependent on the disease of Peyer's patches—

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[1] I have elsewhere shown that the rash and the intestinal disease cannot be considered supplementary of each other. See *Medical Times*, December 1849, and January 1850.

i. e., in the same way as the abdominal signs undoubtedly were ; and it is to be carefully borne in mind that the external, the hygienic, conditions of either group of cases, were precisely the same in all respects. They occupied the same wards, partook of the same diet, slept on the same beds, under the same amount of clothing, and had the same physicians to attend them, and the same nurses to wait on them.

Moreover, of the symptoms common to the two, the headache continued longer, and the delirium and somnolence came on, as we have seen, much later, in typhoid than in typhus fever; and the delirium, too, possessed a more active character. These differences, also, cannot be explained by the presence of intestinal disease in the former, and its absence in the latter affection.

The short comparative duration of the cases of typhus fever, here considered, is another remarkable point of difference, totally inexplicable by the hypothesis, that typhoid fever is typhus fever with intestinal ulceration. Had the cases eventually recovered, it might have been said, that the intestinal lesion prolonged the disease in the cases of typhoid fever; but that all the fatal cases of fever, with a local lesion of so severe a nature as that recorded to have been present in the cases of typhoid fever, should have had a much longer course than all those other fatal cases of fever in which no organic change of structure could be detected after death, appears to me inexplicable, on the supposition that the former is simply the latter disease, with this serious lesion superadded. Let me repeat, by this hypothesis we are asked to imagine that death is retarded in fever by extensive ulceration of the small intestines, and enlargement, softening, and even suppuration of the mesenteric glands. Surely it behoves the supporters of such a statement to bring forward cogent proofs of the identity of the specific cause of the two affections ere they ask us to admit its truth.

The same mode of reasoning appears to me equally conclusive, when we consider the comparatively early period of the disease at which the patients, suffering from fever, lost the ability to make muscular exertion. For to suppose that the presence of abdominal complication in fever invariably prevented the extremely early supervention of debility, is, *a priori*, still more absurd than to suppose such lesions to have retarded death. How, again, are we to explain, if we regard typhoid as typhus with abdominal complication, the differences observed in the ages of the patients, in their general manner ; the muddy hue of the skin, and uniform flush of the face, the injected conjunctivæ, and contracted pupils in typhus fever ; and the comparatively clear complexion, the pink flush limited to the cheeks, the pale conjunctivæ and the large pupils, in typhoid fever ?

In what way, also, are we to account for the differences observed in the physical breath signs, on the supposition that the one is merely the other, with abdominal complication ?

Death itself, moreover, adds new proof to the non-identity of the general affection in the two diseases. The comparatively rapid loss of muscular rigidity, the discoloration of the surface, the more flabby condition of the heart, liver, and kidneys, the extreme softening of the stomach, and the early separation of the epithelium, after typhus fever, are all cadaveric changes, by which death makes us cognizant of a condition of the system at large, which condition must have existed anterior to the cessation of life from that disease; and which condition could not have been present in the cases of typhoid fever, or death would have made it manifest.

I need not here more than advert to the difference observed in the lesions which death simply enabled us to lay bare. The almost constantly congested brain and membranes in typhus fever; the frequent presence of the signs of pre-existing serous inflammation in typhoid fever; the difference in the nature of the pulmonary lesions in the two —are inexplicable on the supposition that the one disease is the same as the other, excepting so far as concerns the abdominal affection.

Thus tried by facts—e. i., by recorded symptoms and lesions,—the assertion that typhoid fever is merely typhus fever with abdominal complication, is completely refuted.

2d. But another mode of explaining the differences which exist between the two diseases has been given—i. e., that the differences observed depend on variations in the epidemic constitution. These cases afford a complete answer to this assertion. For a majority of the cases here analysed of both diseases were observed during the same epidemic constitution. If the reader will refer to p. 668 of the last volume of this Journal, he will find that nineteen of the cases of typhus fever I have used in these papers were collected between May and November 1848; and that thirteen of the cases of typhoid fever were collected during the same months of the same year. For such as prefer broad general assertions to the details of particular but more limited facts, I may remark, that during three years' attentive watching of nearly all the cases admitted into the London Fever Hospital, in which time there have been epidemics of relapsing fever, typhus fever, and cholera—and, consequently, according to those whose opinions I am here examining, as many changes in epidemic constitution—I have seen no alteration in the general or particular symptoms of either typhus or typhoid fevers, or the lesions observed after death from either—i. e., from November 1846, to November 1849. The cases of typhoid fever—which disease is rarely absent for a fortnight from the wards of the hospital,—preserved their symptoms unchanged, and presented the same lesions, whatever the epidemic constitution that prevailed; the same is true of typhus fever. Cases of the latter disease are also rarely absent from the wards of the same institution. It is there common to see patients occupying beds side by side, and presenting respectively the well-marked characters of either disease.

But to return to the particular cases here analysed. Allowing to

epidemic constitution all the power of modifying disease claimed for it by certain writers, it must be granted that whatever influence this epidemic constitution exercised over the group of cases without intestinal lesion, it ought to have exercised over the group of cases with intestinal lesion, because the cases of the two groups were scattered indiscriminately over the space of two years only. If, I repeat, the two affections were really the same disease, then the same epidemic constitution ought to have impressed on both the same general features, implanted in both the same local lesions, and given to both the same tendency to cadaveric change, and this allowing for all the modifying influence which the accidental presence of the abdominal lesion in the one and its absence from the other group might have occasioned. The analysis of every symptom and every lesion shows that the two affections were not thus assimilated by the prevalence of any particular epidemic constitution. But if this epidemic constitution, by any stretch of the imagination, could be supposed to change from week to week, to cause the case attacked to-day to have typhus fever, the individual who takes the disease to-morrow to have typhoid fever, still, it could not account for the fact,—as well established as any fact in medicine,—that typhoid fever rarely, if ever, affects persons more than fifty years of age ; while age exerts little influence in determining the occurrence of typhus fever.

Thus, then, the assertion that typhoid fever is merely typhus fever modified by the prevailing epidemic constitution, is as irreconcilable with facts, as that the former disease is simply the latter with abdominal complication.

To conclude,—In the first of these papers I proposed to examine whether typhoid fever and typhus fever differed from each other in the same way as small-pox and scarlet fever differed from each other; and, for the purpose of comparison, I laid down certain grounds, as those on which we founded our belief in the non-identity of the two last-named diseases. Those grounds were :—

1st, In the vast majority of cases the general symptoms differ—i. e., of small-pox and scarlet fever.

[This holds equally true with respect to the general symptoms of typhoid and typhus fevers.]

2d, The eruptions, the diagnostic characters, if present, are never identical—i.e., in small-pox and scarlet.

[The particulars detailed in the foregoing papers prove that this is as true of the eruptions of typhoid and typhus fever, as of those of small-pox and scarlet fever.]

3d, The anatomical character of small-pox is never seen in scarlet fever.

[Just in the same way the anatomical character of typhoid fever —i. e., lesion of Peyer's patches and the mesenteric glands—is never seen in typhus fever.]

4th, Both—i. e., small-pox and scarlet fever—being contagious

diseases, the one by no combination of individual peculiarities, atmospheric variations, epidemic constitutions, or hygienic conditions, can give rise to the other.

[In these papers I have not attempted to determine how far this holds true with respect to the diseases here treated; but I have considered it in a paper read before the Medico-Chirurgical Society of London, December 1849, the contents of which I may anticipate so far as to state, that to my mind the origin of the two diseases from distinct specific causes, is as clearly proved as that scarlet fever and small-pox arise from distinct specific causes.]

5th, The epidemic constitution, favourable to the origin, spread, or peculiarity in form or severity of either—*i. e.*, small-pox and scarlet fever—has no influence over the other, excepting that which it exerts over disease in general.

[The facts detailed in these papers prove that this holds as true of typhoid and typhus fevers as of small-pox and scarlet fever.]

If, then, the above are the grounds—and, after mature deliberation, I am able to assign no others—for the separation of small-pox from scarlet fever, I think it is indisputably proved, that typhoid fever and typhus fever are equally distinct diseases ;—not mere varieties of each other, but specifically distinct,—specific distinction being shown in typhoid and typhus fevers, as in small-pox and scarlet fever, by the difference of their symptoms, course, duration, lesions, and *cause.*

Before closing these papers I ought to observe, that, with respect to some secondary points—*e. g.*, the chronological relation between the laryngeal and pharyngeal affections—it may be considered that I have drawn general conclusions from a too limited number of facts.   But a few facts, impartially observed, minutely recorded, and carefully analysed, are, I believe, more likely to give correct results than a multitude of general observations ; and, moreover, I believe most men would be astonished if they had in numbers all the cases of any given disease they had ever seen, yet concerning which they have generalized.   The method I have adopted, however prolix it may be, however difficult to conform to, however tedious the details into which it leads, has this advantage, that if the observer be honest and capable of noting what is before him, thinking men may judge of the value of his facts, the force of his reasoning, and the correctness of his conclusion ; whereas general observations, while they are totally incapable of proving anything, are exposed to all the fallacies of definite statements, because the one, like the other, rests ultimately on the accuracy of the facts observed. If the observations, on which any reasoning is founded, be erroneous, no cloaking of those observations in general terms, can render the conclusions correct.   It has been objected to definite numerical statements, that they mislead the reader by an *appearance* of accuracy, in cases where there has been great inaccuracy in observation.   This objection appears to me to lie against the condition of the reader's mind and not against the

method. For if the reader fails to examine, 1st, the trustworthiness of the author, and 2dly, the legitimacy of his conclusions, the fault is, obviously, mentally his own, and in noways to be ascribed to the method. Because chemists have, by the imperfection of their analyses, arrived at incorrect conclusions as to the ultimate constitution of various organic bodies, we surely would not have them henceforth confine themselves to the general impressions produced on their minds by a series of experiments or observations. The more complicated the problem to be solved, the more careful ought we to be that *every* step in its solution is made correctly. How complex questions, such as arise in medicine, are to be determined mentally—*i. e.*, without the aid of figures—by ordinary men, I am at a loss to conceive. Yet physicians think to solve, by mental reveries, problems in comparison with which the most difficult that the most renowned mental calculators ever answered were child's play; and not only do they think to solve these problems, but to carry in their minds for years the complicated materials by which they are to be solved.

Who can tell what general statements are worth, without knowing on what evidence they rest? One man's many is another's few. Last month (Oct.) I saw 30 cases of fever,—to me these were few; to men with smaller opportunities of observing that disease, they would have been many. One man's frequent is another's seldom.

So much for the method I have adopted.

Finally, as an apology for the length to which these papers have extended, I may quote the following passage from the learned professor of physic in the Transylvanian University:—" This question of the essential likeness or unlikeness of these two diseases,—typhus and typhoid fever,—is one of the most important and interesting questions of specific diagnosis that has ever occupied the attention of physicians;" and may observe, that if ever the question is to be settled, it must be by a careful analysis of all the symptoms, and all the pathological lesions, observed in all the cases of the two diseases which fall under the observation of the same physician during any given period of time, and then by tracing a number of cases of either disease back to their specific cause.

ARTICLE III.—*Inguinal Aneurism.—Suicide by Wound of the Tumour.* By JAMES MILLER, F.R.S.E., Professor of Surgery in the University of Edinburgh, &c.

THE following case is interesting, on account of its melancholy and unusual result. So far as I know, suicide by opening an aneurismal tumour is unprecedented.

During hospital visit, on the 3d of January last, I was told that a man, affected with aneurism, had been recommended to my care by my friend Dr Hamilton of Falkirk. I found the patient painfully

and slowly ascending the stairs, bent nearly double, overtaking but one step at a time, then halting to rest, and moaning all the while. On getting him to bed, a large aneurism was found pulsating in the right groin.

His name was Roderick Mackenzie, and he stated his age to be 60 —he looked more; of robust build and florid complexion; but with such peculiarity of appearance, as led me, at the time, to tell the pupils my suspicions of an aneurismal diathesis. He had been a soldier; and, since his discharge, had followed the vocation of an occasional porter and itinerant hawker, by turns—often altogether idle. He confessed to habits of general intemperance; but his health had been good until about three years ago. Then he received a kick in the right groin, probably in a scuffle; swelling, with pain, followed in the injured part; and the swelling, about the size of a large nut, was observed to pulsate plainly. After no long time pain disappeared, but pulsation remained, and the tumour continued to enlarge slowly.

About six months before his admission, he sought relief in the Glasgow Infirmary, the size of the swelling having now become very inconvenient, and its pulsation having inspired him with fear. The propriety of an operation was there explained to him, but he declined to submit to it, on the ground that he suffered no pain; and after a residence of thirteen days in the hospital, he was discharged,—of course unrelieved. According to his statement, trial had been made of pressure on the distal side of the tumour. After this, he acknow-ledged to have become more irregular and intemperate in his habits than before. His exertion was also greater in walking; and, in con-sequence, he believed, the tumour then enlarged rapidly, and also be-came the seat of severe pain. Latterly, the pain had been almost into-lerable in the tumour, thigh, and knee, and even affecting the whole limb. In the knee there was a sense of fulness and cold, as well as pain; and the leg was swollen by œdema. Even in bed the body could not be straightened, the least attempt to do so greatly aggra-vating the pain; and the limb was always laid over its fellow, bent to an acute angle upon the trunk. The tumour bulged out imme-diately beneath Poupart's ligament, of oval form, with its long axis in the direction of the ligament, its size as large as that of two fists, not diminished by ordinary pressure, the integuments tightly spread over it, pulsation very strong and superficial, and a harsh bellows sound heard by the stethoscope. In the position in which he lay, it was impossible to trace exactly the upward limits of the tumour, or to test the effect of pressure on the iliac.

He had a troublesome harsh cough, each impulse of which in-creased his suffering by the tumour; and on examination of the chest, the ordinary signs of bronchitis were found. His pulse was 100; his digestive organs in tolerably good order.

Immediately on admission, he expressed an urgent desire to have an operation performed, being plainly possessed of extreme terror lest

the tumour should burst, and prove suddenly fatal. He was evidently well acquainted with the nature of the disease, and seemed to have his whole thoughts bent on relief from suffering, as well as on protection from hazard by hemorrhage; he literally implored the operation. Next day, however, his condition put all idea of immediate procedure quite out of the question. In consequence of the exertion of travelling, and in consequence, also, perhaps, of a good many stethoscopes having been upon the tumour, both part and system were found in a state of high excitement. The pulse was very rapid, the tongue dry and loaded, the cough aggravated, the tumour tense, and, if possible, more painful than before. The necessity of delay was explained to him; fomentation was ordered to the tumour, with the cessation of all handling; aconite was given internally in small doses, frequently repeated; a blister was applied to the chest; the bowels were moved, and an opiate was administered at bed-time.

Under this treatment the excitement somewhat subsided; not until, however, the integuments had become slightly dusky over the prominent part of the tumour.

On no occasion did I ever find the least declension from his paramount desire to be relieved from actual suffering, and much apprehension of future evil, by an operation, at whatever hazard.

On the 8th of January a consultation was held; and it was agreed to continue the sedative treatment, with a view to performance of the Hunterian operation, so soon as a favourable opportunity should occur. Notwithstanding the risk of inducing delirium tremens, it was considered prudent to order a full bleeding from the arm; and he was accordingly bled that afternoon to the extent of 17 ounces.

On the 12th he was certainly, in all respects, and considerably, improved. The cough and febrile symptoms were less; the tumour was diminished both in bulk and pulsation; the discoloration of integument was gone; and I was led to remark that it was possible this excitement might be about to terminate in a spontaneous cure; so well was he, though still harping on the operation. And in compliance with his continued urgency, I that day at visit fixed an early time for deligation of the iliac.

In the course of that night, however, matters took a sudden change. Between three and four o'clock on the morning of the 13th, I had a hurried message from the hospital, that " the aneurism had burst." As hastily as I could, I obeyed the summons; pondering, as I went, on three things :—1. How could this be, seeing the case was so favourably circumstanced not many hours before? Yesterday it had taken a decided turn for the better; and why should this sudden change for the worse be now? 2. Will the man be alive on my arrival? 3. If so, how unpleasant must it be to be compelled, by a sense of duty, to tie the iliac—perhaps the common iliac—in a dying man, at night, in the ward, and with candle light! On my arrival, it was almost a relief to find the man a corpse; pale, shrunk, and exsanguine. A large pool of blood was on the floor; the bed-clothes

were saturated with clots; the limb was straight, and the tumour collapsed. Near its centre a small aperture was seen ; plainly the source of the fatal hemorrhage. Little more than a glance sufficed to convince both Dr Dunsmure (who had kindly accompanied me) and myself, that it was not a " burst," `but a wound. And inquiry disclosed the following odd history.

The man had gone quietly to sleep at the ordinary time at night; but about one o'clock in the morning, the patient who lay next to him was awoke by his strange and violent conduct. He was seated in bed, frantically dashing an ℥ viij. medicine bottle against his head; and bleeding profusely from the temple, where he had inflicted three or four deep wounds. He was immediately arrested in this wild work; and when asked his reason for it, said that he was weary of life, and wished to die, but that he was "hard to kill." My clerk, Dr Thomson, was immediately sent for; who, having staunched the bleeding and bound up the wounds, remonstrated with the man on his folly and crime. Though caught in the act (and to his fellow patient he had admitted it), yet to Dr Thomson he denied the attempt at suicide ; and asserted that the wounds had been caused by accidentally falling on a bottle while out of bed. ℥ viij. or ℥ x. of blood had been lost.

He now appeared calm and collected ; but still spoke gloomily of a wish to die. A sudden and complete change had taken place in his mind in this respect. Hitherto he had been all anxiety to live ; and now speedy death seemed his only desire. In consequence, a careful search was made in his bed and body-clothes ; and everything was removed with which it was thought he might do himself injury.

He remained quiet for some time, but afterwards became restless, got up, and was observed to search his trousers carefully. Seeming to be disappointed there, he searched his waistcoat; and, having rolled it up carefully, he went to bed again—talking somewhat incoherently.

About half-past two the man in the adjoining bed again awoke, and had his attention directed to the patient, who was lying on his left side, almost on his belly, looking steadily across at him. He— the narrator—said that he then heard a noise of fluid trickling on the ground ; and, supposing M'Kenzie was purposely wetting the bed, called to the nurse, who had just been summoned out of the ward to another patient. All this time M'Kenzie kept looking stedfastly at him, without saying a word. It was soon found that the fluid was blood ; and Dr Thomson was immediately sent for. He had not gone to bed; intending to visit the ward again ; and came at once. On turning down the bed-clothes, he found M'Kenzie deluged in blood ; and with a stream issuing from the tumour, such as would come through a full-sized catheter in emptying the bladder. He immediately placed his finger on the small aperture from which he saw the stream issuing; and all further loss was completely arrested.

At this time M'Kenzie was in a fainting state; his lips and general surface were quite pallid; his pulse was scarcely to be felt; and he remained for a few minutes in a state of apparent unconsciousness. Then he opened his eyes, and began to struggle violently; twisting himself about, coughing, and calling out loudly.   With some difficulty pressure was retained on the wound, and not a drop of blood was lost; although the tumour, which at first had been collapsed, now became tense and full again.

He continued violent, and while Dr Keith was leaning over him, to keep him still, M'Kenzie seized his arm with his teeth, and bit him severely.   Shortly afterwards, however, he again fainted; and this time the syncope proved fatal.   Altogether, nearly three quarters of an hour had elapsed between the first notice of bleeding and the fatal result.   The bed was searched carefully after death; and nothing lethal could be found; till at length a pocket corkscrew was discovered, shut and folded up in his shirt.   With this, no doubt, the fatal wound had been made; either by a sudden plunge, or by gently insinuating it.   On a narrower inspection of the parts, several scratches were found on the external aspect of the wound, scarcely skin deep, and of a waving form—just such as one would expect from a faltering and preliminary use of the instrument.

The account of the dissection is extracted from the record of the pathologist.

External Appearances.—General paleness of skin.   On the right temple, there are four deep incised wounds.   In right groin there is a wound about three lines in length, surrounded for three-fourths of an inch by a livid margin; close to which, on the outside, are four superficial scratches.

Thorax.—A small quantity of clear fluid in the pericardium.   Heart weighed fifteen ounces.   Some atheroma on mitral and aortic valves, as well as on the commencement of the aorta.   Endocardium, on the left side, slightly opaque. Some lax adhesions of the upper part of both pleuræ.   Lungs everywhere crepitant; rather dark in colour; bronchi congested, and containing a considerable quantity of muco-purulent matter.

Abdomen.—Liver, spleen, and kidneys healthy; with the exception of a few small cysts in one of the latter.

Arterial System.—The aorta generally dilated; but slightly, and with considerable regularity.   The abdominal aorta presented considerable irregularities on its inner surface, from opaque and soft deposits.   The thoracic aorta was not slit open; but could be felt similarly affected.   The external iliac showed one or two hard plates on its inner surface.   On making an incision down to the middle of Poupart's ligament, on the right side, this was found stretched over a rounded tumour; which extended about an inch and a-half on each side, and about one and a-half inch above the level of that ligament.   The incision having been extended downwards, along the line of the femoral artery, and the integuments dissected off the tumour laterally, this was found to be much collapsed; but still, apparently, about four or five inches in longitudinal, and three in lateral diameter.   The subcutaneous tissue, about the external wound, was infiltrated with blood; and the iliac fascia, psoas, and iliacus muscles, together with the adductors of the thigh, where they lay in contact with the tumour, were stained with blood colour.

The tumour arose, apparently, from the external and anterior side of the artery, not far from Poupart's ligament; and the external iliac was seen to pass behind, and to the inside of the sac; lying at this point in close contact

with the internal iliac. The more precise relations of the sac were not dis-
sected; the parts being sent to the University museum. The external iliac
above the tumour, and the femoral below it, were thickened, and slightly irre-
gular in diameter. The profunda was also much thickened.

The body, being destined for anatomical purposes in the school,
was not more minutely examined at the time. But Dr Struthers, to
whose rooms it went, informed me afterwards that he had found
aneurism of the aorta, commencing immediately below the origin of
the left subclavian, and extending for some inches downwards; pas-
sive, by dilatation.

The brain, also examined in the dissecting room, ten days after
death, showed no morbid appearance.

All the arteries in the body were found much diseased; "so much
so," says Dr Struthers, "that several of the larger trunks—including
the left external iliac—were cut through by ligatures which were
applied to them in the ordinary way." Truly the aneurismal dia-
thesis had been thoroughly developed.

On a closer examination of the tumour, the aneurism was found
springing from the common femoral, as already described; with a large
aperture of communication—not less than between two and three
inches.

Several reflections naturally suggest themselves in connection with
this case. 1. What was the form of delirium which led to the fatal
act? On this dissection throws no light, save what is negative. The
brain showed no trace of disease, either recent or old. The previous
history of the case points to delirium tremens. One objection, how-
ever, operates against the adoption of this view; namely, the cool and
determined, yet sly and cunning way in which the act of self-destruc-
tion was accomplished. The victim of delirium tremens usually acts
under sudden and violent impulse, without any thought or attempt
of concealment. This man showed the cunning and deliberation
which is more frequently observed in simple mania. Were a patient,
affected with delirium tremens, caught in the act of attempting to
beat his brains out, he would not likely deny the deed—as this man
did; but would rather admit it at once, try to resume his violence,
and perhaps give voluble utterance to some strange reasoning in-
tended to justify his conduct as meritorious and praiseworthy.

Also, there was the absence of such delusions as usually prevail in
delirium tremens, and may lead to self-destruction; no men plotting
against him, no animals attacking him, no spirits vexing him, no
remembrance and remorse from imaginary deeds of villany done by
him. All along, he possessed one paramount desire of escaping from
suffering caused by the aneurism. And, at first, he sought for this,
anxiously, by means of a *remedial operation*. But, disappointed in
that, his purpose still remained: while he held to the object, he shifted
only the means; and he sought relief by *death*, at his own hand. At
first he anxiously sought to be relieved both from the *pain* of the
tumour, and the *danger* of its progress. Suddenly he dropped the

latter half of his ruling thought; and, in seeking fulfilment of the for-
mer, turned the other into its very opposite, determined no longer to
endure the racking torture of the limb. Was this the delirium which
one might naturally expect at the end of several days of bronchitic
fever, with wakefulness, and consequent irritation of the nervous
system? Or was it an attack of acute mania, suddenly set in? Or
was it the crisis of insanity which had existed from an anterior date?
Was it the fear of death by bleeding, possessed of his whole soul,
grown into a myth, and, demon-like, forcing him on to the very thing
he dreaded; as the timid sometimes feel a strange and all but irresis-
tible impulse to leap into the air from some giddy eminence? After
long reasoning, we should probably not arrive at any much better
verdict than that of an English jury might be—"*felo da se;* the
man being at the time of unsound mind"[1]

2. In reference to the maniacal crisis, was the bleeding a judicious
practice? In such a patient, one was naturally unwilling to draw
blood largely from the system, lest delirium tremens should in con-
sequence ensue. Still, however, other sedative means had been used
without sufficient effect; the excitement of the circulation was great;
the tumour was *acute*, strongly pulsating, decidedly enlarging, and
very superficial, with already some discoloration of the skin; the
man was suffering constant and great pain, and he was urgently en-
treating the operation, for which, as yet, he was in no fit state of
preparation. Surely, under such circumstances, venesection was

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[1] It is not uncommon to find a man ready to submit to death, and yet quite
unable to bear pain, even though this latter may be in itself of quite a trifling
character. For example, during the idolatrous and bloody procession of Jug-
gernaut, a British officer rides up to a poor native, who is calmly waiting his
turn to be crushed to death, as the cumbrous machine slowly advances on him.
" What are you lying there for? "   " To die."   " But you shall not," and
forthwith he attacks him with his riding-whip. The devotee may lie unmoved
under a stroke or two ; but very soon, in most cases, he is forced to get up and
scamper away. He had no fear of death ; on the contrary, he courted it; and
yet he could not bear the thong's smart upon his skin. Or, again, two gentle-
men were travelling in Canada during intense cold;—almost at home, one of them
became oppressed with sleep, and vowed that, cost what it might, rest and sleep
he would have; knowing well, as he said so, that the inevitable cost was death.
His friend reasoned with him, but all to no purpose. At length, however,
wearied with speech, he betook himself to another and more persuasive argu-
ment. Having broken a small branch, he struck the sleeper on the hands; and
at first this was borne patiently; but as the blows fell thick, not on his hands
alone, but on nose, cheeks, and every practicable part, he lost both temper
and sleep, and getting up, pursued his humane and friendly tormentor in
hot passion. The pursued retreated in the direction of home ; and in a short
time, at his own hearth, the pursuer admitted, with tears of gratitude, that to
his friend's timely assault—though much resented at the time—he owed his
life. Like the Indian idolator, he had been prepared for death, but could not
bear the smart of flagellation. And so this poor man, submissive to the aneu-
rismal pain no longer, had lost all fear of death, and resolved to be free from
corporeal suffering *at all hazards;* " when he himself could his quietus make,
with a bare bodkin."

not only warrantable, but expedient, even had the circumstances of contra-indication been more powerful than they were. When bled, I was aware of the risk run, as regarded delirium; and, accordingly, opiates and other means for counteraction of the untoward tendency were not neglected.

3. General examination of such cases cannot be made too carefully, previous to determining on operation. The aneurismal diathesis was disclosed, of great extent, by dissection; and the man's appearance strongly suggested suspicion of it at the time of his admission. Yet the stethoscope, in the hands of an accomplished physician, failed to detect anything amiss or unusual in the heart, or in the line of the larger vessels. Yet there was aneurism of the thoracic aorta; and the external iliac would not hold a ligature ordinarily applied.

4. Aneurisms, when opened, do not in general prove so immediately fatal as might be expected. This is well known in regard to those tumours which give way by ulceration, or true "bursting." At the time of opening there may be a great hemorrhage, even *ad deliquium;* but the interposition of a clot, which plugs the aperture, usually saves life at the time. It is only by repetition of the hemorrhage that life is lost; and, as in the case of Mr Liston and others, the interval may extend over months; or bleeding may not recur at all, the patient dying of the aneurism, but in another way—worn out by hectic, or choked by pressure. The artificial opening of such an aneurism as this, even by a small wound, might have been thought likely to have proved fatal almost immediately, or at least before effective assistance could have arrived. Yet it did not; and the man lived for three-quarters of an hour, notwithstanding previous loss of blood from the head.

5. A good example is afforded of how great and unforeseen difficulties may arise in attempts to tie the larger arteries, on account of aneurism. Operating in this case, the external iliac would have been the vessel aimed at. Cutting down upon it in the ordinary way, the finger would have reached the accustomed site on the psoas, and no artery would have been found there. It was displaced fully an inch down towards the sacrum; in fact, it was lying in close contact with the internal iliac. Following it thither, the operation would have been rendered as formidable and difficult as for ligature of the latter vessel. But the change of site might not have been realised, until after such delay and groping as to peril the operator's reputation for anatomical knowledge. The bystanders were not to know that some unusual difficulty had come in his way. Again, when the living tumour was tense and full, it is probable that at an early period of the operation it would have become plain that the external iliac was absolutely impracticable, in consequence of being to a large extent actually overlaid by the tumour; and the operator would have been compelled to change his route, with a view to secure the common iliac. And, lastly, supposing the vessel reached, isolated, and about to be tied, it is possible, that in running the first noose tight, the

arterial coats would have been actually cut through. And then in the gush of blood—probably fatal—how few would feel that the fault lay with the artery and not with the operator? The latter, in making his explanatory statement, might be responded to, in the breasts of many of his hearers, only by a " Credat Judæus!" Whence a double lesson plainly arises,—Not to be too confident of success in our own operations, and not to judge too harshly the failures of others.

6. Reviewing all the circumstances of the case, a conviction is forced upon one, that the suicide only anticipated, by a few days, the inevitably fatal result. Had the preparatory treatment advanced favourably, an operation would have been performed, the common iliac would have been tied, and such a vessel, in such a system, precluded all reasonable expectation of success. Still nothing, save the paroxysm of presumed insanity, can at all extenuate the rash act of the unhappy man.

ARTICLE IV.—*Details of Three Cases of Hydatids of the Uterus, with Remarks.* By P. B. HISLOP, M.D., Govan.

(*Read before the Glasgow Medical Society,* 22d *January* 1850.)

CASE I.—In the month of November 1843, I was waited on by Agnes R., aged 17 years, of middle stature, and fair complexion. About six months before, the patient began to observe her health visibly declining, general falling off in flesh, loss of appetite, flatulence, thirst, cessation of the hitherto regular catamenia, and instead, an occasional flow of a dirty or blood-like vaginal discharge, of the consistence of thin cream, and of an offensive odour, which generally lasted for a day or two, and then disappeared. Continual sickness and pains in loins.

About ten or eleven weeks ago, the patient's attention was directed to the increasing size of her abdomen, which, notwithstanding her efforts to hide it, speedily drew the attention of her female relatives to her condition; and her appearance had now assumed an aspect so decidedly suspicious, as to cause them to tease her very much for an avowal of the paternity of the abdominal protuberance. A council of grey-haired matrons had been held, whose solemn opinion was adverse to her hitherto spotless character for chastity; and it was as much with a view to clear up the family feuds so engendered, as for the purpose of obtaining medical relief, that the patient, accompanied by one of the aforementioned jury, now supplicated a medical opinion.

On examination, I found her abdomen had the usual size and appearance presented by a female advanced in pregnancy,—hard to the touch, and dull on percussion. She was much emaciated, and her countenance quite anemic, and of a dull bilious hue; her mammæ were slightly enlarged, but the areolæ around the nipples appeared unaltered.

She readily consented to an examination per vaginam, and the first point of observation was the *integrity* of a hymen of the usual fragility. The neck of the uterus felt much diminished in size and thickness, as in pregnancy ; and the os uteri was sufficiently dilated to admit the index finger, which discovered a substance softish to the touch, having the feel of a placenta, lying over its interior surface, and which could be *sparingly* poised on the tip of the finger without increasing the amount of colouring matter in the discharge.

The speculum revealed nothing unusual in the appearance of the lining membrane of the vagina. The stethoscope afforded the negative information of no pulsation of a fœtal heart, and no placental murmur. The patient's urine was free from albumen, her stools of a natural colour, and no pain had ever existed in the region of the liver.

Taking a general view of all the circumstances of her case, it was quite clear to my mind that this was a case neither of dropsy nor of pregnancy, but that the disease was essentially uterine in its seat, and in character an abnormal product, distending the cavity of that organ. Without attempting to determine its precise nature, I resolved forthwith to dislodge this abnormal body from the uterus, either by inducing uterine contractions, or, if necessary, by manual interference. With this view, having previously ensured a regular action of the bowels, I gave her ʒij. of the ergot of rye infused, but without effecting any result. I next introduced a 6 catheter into the uterus, and finally succeeded in causing the expulsion of a very large quantity of dirty-like serum and purulent matter, having an extremely offensive odour. In the course of the subsequent night, pains, precisely similar to labour pains, were induced; and after repeated doses of ergot, the patient, on the following morning, gave birth to an immense mass of a stringy-looking substance, completely clustered over with hydatids, small and large.

Under the influence of the ergot, the uterus contracted kindly, and by the subsequent use of mineral acids, wine, and other tonics, the patient made a slow, but uninterrupted recovery. She has since got married and borne children.

CASE II.—Mrs A., aged 26, a lady of fair complexion and delicate frame, the mother of several healthy children.

For several months prior to this date, September 1847, she has been losing flesh, and much annoyed with a profuse leucorrhœal discharge, which tonics and astringent injections have failed to arrest,—has menstruated regularly, but profusely, till four months ago, when suppression of the function took place, and in its stead, frequent discharges of clotted blood or bloody serum have occurred at irregular intervals, and occasionally in rather profuse and exhausting quantities. She complains of frequent paroxysms of sickness, faintness, and feeling of exhaustion,—straitness and sense of weight across the chest, together with palpitation of the heart, loss of appetite and borborygmi—dragging pains in the back and loins, and feebleness of the lower extremities.

Above the pubis there can be readily felt, and accurately defined, a circumscribed swelling of the size of a well-developed uterus immediately after delivery; solid, but not painful to the touch ; of a regular and globular shape, and rather mobile. This tumour has only recently attracted the notice of the patient, and she fancies it varies in size from time to time.   On examination per vaginam, the uterine orifice appeared *quite closed*, and no effort to introduce the finger was successful. The tumour in utero could be readily felt through the vaginal walls.

Patient assures me it is *impossible* she can be pregnant.

Failing, after the lapse of several weeks, to obtain any relief of the symptoms, and especially of the severe sanguineous discharge, from the use of mineral acids—the recumbent posture—gallic acid—iodine injections—plugging the vagina, and even ergot of rye, I resolved to take advantage of one of the capricious intervals of a cessation of the hemorrhage, to artificially dilate the os uteri, make a manual examination of the uterine cavity, remove the cause of irritation, and endeavour to bring about a healthy state of the utero-vaginal mucous membrane.

With this design I prepared a series of sponge-tents, and taking one of a very small diameter, I, after no small difficulty, in consequence of a slight twist in the os uteri, in the direction of the sacrum, succeeded in introducing it partially

within the orifice. This I repeated every twelve hours, each time employing a tent of increased diameter, causing, in the first instance, a considerable aggravation in the amount and fœtor of the sanguineous discharge, as well as some slight periodical pains.

At the termination of the fifth day I had accomplished the complete dilatation of the os uteri, bringing into view, through the speculum, a bulky bloody-tinged body, hanging pendulous from some part of the superior surface of the uterine cavity.

Having previously at intervals administered two cupfuls of a pretty strong infusion of ergot, I introduced my hand into the uterus on the 11th of October, and, guided by the morbid mass itself, sought its most elevated attachment, and cautiously detached it from the mucous surface of the uterus. This I repeated until I conceived I had removed the entire bulk from the uterus, which thereafter slowly, though *sparingly*, contracted on my hand, and on the following day could scarcely be felt.

A considerable hemorrhage took place both during and subsequent to the operation, which, from the debilitated and exhausted state of the patient, it was exceedingly desirable to obviate. I directed cold water cloths and warm flannel alternately, to be applied locally. Repeated doses of the Infus. Secal. Cornut. during the day and subsequent night, and five-grain doses of gallic acid administered thrice a-day, were continued for upwards of a fortnight, when the coloured discharge had nearly ceased. Under this treatment, and a generous diet, she recovered slowly.

The masses removed in this case were very similar to those expelled in the first case,—a series of stringy bodies, like the fibrinous portion of a clot of blood, covered internally and externally with hosts of large and small hydatids.

CASE III.—Mrs M., aged about 48 years, the wife of a respectable tradesman, and mother of a large family, the youngest about four years, began to complain, in May 1849, of general weakness, pain in back and loins, and feeling of general uneasiness. At her usual period, towards the end of the month, the patient menstruated.

June.—In addition to the persistence of the previous symptoms in an aggravated degree, she has now a feeling of slight tenderness at the bottom of the belly, thirst, flatulence, tympanitic abdomen, acid state of stomach, and vomiting of food. The catamenial flow, which commenced last month, is not quite gone; she has used Mur. Tinct. of Iron, Valerian, Assafœtida, Arom. Sp. of Ammonia, and gentle aperients. Spent following month of July at the coast and in the country, but returned without any symptoms of improvement. Her entire feelings are now of a similar character to those of former pregnancies,—constant vomiting of solid food, and frequent attacks of severe retching ; breasts, feet, and legs swelled. On examining the abdomen, I found it exceedingly tympanitic, quite equalling in size that of a woman at the full period of utero-gestation, emitting a clear sound on percussion, and readily yielding before the pressure of the hand. Through this immense soft distension I could readily detect, at the lower part of the abdomen, the uterus enlarged to about the size of a four months' pregnancy, soft and regular in outline, and capable of being moved from side to side, but giving the patient little pain. The cavity of the vagina, and lips of the os uteri, quite healthy. The uterine orifice was closed, and would not admit the finger.

August 8th.—Was hastily summoned to the patient. The hemorrhage, hitherto moderate, had become very profuse ; large clots of dark-coloured blood filled the hollow of the mattress on which the patient reclined, their escape causing faintishness, retching, vomiting, giddiness, headache, and feeling of complete prostration. Lowered the patient's head, plugged the vagina with a handkerchief, applied cold lotion to the bottom of the belly and external genitals, and gave repeated doses of ergot of rye and creosote internally.

By the following morning the severity of the more dangerous symptoms had

subsided, the patient was ordered five-grain doses of gallic acid three times a-day, mild nutritious soups, and a sparing allowance of port wine. Under this treatment the offensive sanguineo-serous fluid, which had continued to flow since the month of May, gradually diminished, the tympanitic state of the belly was resolved, the stomach could, in a great measure, discharge its functions as in health, and the patient's health was so far recruited, that in three weeks she was able to move about in her apartment,—the uterus, however, still remaining enlarged.

After the severe attack just detailed, I had resolved to dilate the os uteri, as in the previous case, and ascertain the nature of the irritation within the uterus, as I was satisfied, from the unusual severity of the sympathetic symptoms, the great diminution of strength the patient was sustaining, even prior to the occurrence of repeated hæmorrhagic attacks, and the offensive nature of the discharge, that it was a morbid mass which occupied the uterine cavity; but in consequence of the unlooked-for amendment which took place, I was diverted from the scheme in the meantime.

October 11th.—After a ride in an omnibus on the previous day, the patient was seized with sharp periodical pains, similar to the premonitory throes in parturition, accompanied by a return of the hemorrhage. By plugging the vagina, and the application of cold cloths, the patient succeeded in keeping the hemorrhage in check, though without sensibly diminishing the pains, which continued during the whole of that and the following day at distant intervals.

About four o'clock A.M. of the 13th, I was requested to visit the patient, who had had a severe return of the hemorrhage, and was now taking regular and long-continued pains. The os uteri I found dilated to the size of half-a-crown, and filled with a mass resembling in feel a placenta, but destitute of membranous covering. A dose of ergot was administered, and I waited the further dilatation of the os uteri. In about five hours it was so far dilated as to admit of the hand being introduced; a portion of the mass was detached, and ascertained to be composed of hydatids of a similar character as those already noticed.

As the patient was now terribly exhausted, her only chance was evidently the speedy removal of this collection of hydatids, as no effort of nature seemed equal to the task. I asked my friend Dr James Paterson of this city to see the patient along with me, and on further examination, it was discovered that the hydatic mass did not hang pendulous from the walls of the uterus, but adhered by a very broad attachment to the entire anterior and superior surfaces of the organ; and when removed, was found to fill a bowl of considerable size. Repeated doses of ergot were administered during the day, and a bandage applied.

October 19th.—A return of the violent hemorrhage; a portion of the parasitic mass was again removed; a dose of the infusion of ergot administered, and the patient ordered five grains of gallic acid thrice a-day.

October 30th.—Had a slight return of the hemorrhage to-day, which, in the patient's weakened condition, proved rather alarming. Ordered cold applications to abdomen, plugging vagina, gallic acid more frequently, beef tea every hour, port wine, and perfect quietude.

This patient made gradual amendment, and by the end of December was able to move out of doors.

Remarks.—It affords matter for dispute among pathologists, how high, in the scale of parasitic creation, hydatids developed in the human uterus are entitled to be ranked? or whether, indeed, they are not mere cysts originating around the substance of a blighted conception, which, it is supposed, serves the purpose of a nucleus to the mass? one set of pathologists asserting the latter doctrine, and designating them false hydatids; and another arrogating to them

all the properties and functions usually ascribed to that class of hydatic formations called acephalo-cysts. In the cases here narrated, the bodies had the appearance of small bladders, of a rotund or globular shape, and smooth, shining, semi-transparent appearance, varying in size from the bulk of an ordinary marble to an extreme minuteness, and filled with a pellucid fluid, having the appearance and feel of thin mucilage. No traces of a blighted ovum could be detected in the substance voided in either of the cases; and the stringy substance to which the hydatids adhered, was probably composed simply of the pendulous necks of the parasites.

Their presence in the uterus does not seem to result in any greater evil than what is induced by the irritation of any other foreign agent which may be impacted in that organ. And, accordingly, on their liberation, the general and local health of the patient is not found to have suffered, except from the mere loss of blood.

In regard to the *diagnosis* of the disease, its chief feature is its close resemblance to pregnancy in its early stage; indeed, it is quite impossible to distinguish between the complaints in the early months; nor does the existence of the sanguineous discharge throw much light on the case, as many circumstances may arise in the course of a real pregnancy to give origin to a similar complication, as the partial detachment of the placenta, its development near the os uteri, &c.

Some writers allege that the two conditions may be distinguished by the os uteri being somewhat dilated in cases of hydatids; but this state is not always found to obtain; on the contrary, the os uteri is frequently ascertained to be *firmly closed.* In the later stages of the disease, it may be recognised by the excessive severity of the symptoms, and by the discrepancy between the progress of the abdominal enlargement and a case of ordinary pregnancy.

The statement that the nucleus of the disease is *always* a blighted conception, is, I think, equally liable to be called in question, as both in two of the cases I have met with, and cases recorded by others, such a condition as conception seems to have been very unlikely.

With reference to the *treatment*,—while the ergot of rye and the gallic acid will be found most invaluable aids in arresting the hemorrhage, yet I am convinced that in cases where the symptoms are as urgent as in the cases herein detailed, to remain quiescent, and not interfere manually, is absolutely to peril the life of the patient; and I think, from the success I met with, there is no method more suitable than that adopted in case No. II.

Part Second.

REVIEWS.

De l'Infection Purulente ou Pyoèmie. Par le Dr C. SEDILLOT, Chirurgien Principal des Armées, Professeur à la Faculté de Médecine de Strasbourg, &c. &c. Avec trois planches coloriées. Paris, 1849. 8vo. Pp. 518.

On Purulent Infection or Pyæmia. By M. SEDILLOT. ·

THE subject of the present work, no less than the name of its author, entitles it to our best consideration. M. Sédillot is well known to our readers, and to all acquainted with foreign medical literature, as one of the most active-minded and original surgeons of the present day; and, moreover, an able microscopist and experimentalist. The experiments and observations composing this volume, he tells us, have been gradually accumulating since 1832, when he presented to the Faculty of Paris a " thèse de concours" on an allied topic—that of traumatic phlebitis. In the midst of a busy life of practice, first as an army and then as an hospital surgeon, M. Sédillot has found time for a large number of experiments, illustrative of the facts and opinions which were forced upon his attention in connection with purulent infection after operations, and under other circumstances; and the present volume embraces the fruits of these labours in four chapters of considerable length, of which the first contains a historical view of the subject, the second and third the evidence, experimental and clinical, and the fourth the author's own doctrine, in regard to which he expresses himself in very confident terms, as the reader will see by the following passage from the introduction :—

" I believe," he says, " that I have placed beyond doubt the cause of pyæmia, and that I have explained the symptoms by making the important distinction between those that are constant and those that are variable. The treatment appears to me also to have been rendered more efficacious by the demonstration of the curability of the affection, which several authors have fallen into the mistake of denying."—P. 13.

It may serve to prevent a feeling of disappointment on the part of some of our readers, if we here express a doubt as to whether M. Sédillot's doctrines will generally be regarded as final on this subject. It will be seen from the sequel, we think, that his experiments are far from leading to the absolute and precise conclusions which he deduces from them; indeed, we even venture to doubt if he has really

advanced one step in point of doctrine beyond the most recent of his predecessors.   But as contributions towards the pathology of a most difficult and perplexing subject, we regard the experiments and observations in the volume as of no ordinary importance, and by their number and variety at least, if not by their absolute novelty or conclusiveness, they present a wider field for study than those of any former writer ; and taken in connection with previous observations, especially those of Cruveilhier and MM. Castelnau and Ducrest, they will no doubt contribute materially to the future settlement of many very difficult questions.   We shall, therefore, best fulfil our duty to our readers, as well as to M. Sédillot, by a critical analysis of the doctrine of purulent infection, and the evidence on which it is founded, concluding by a notice of M. Sédillot's own views, and the experiments on which these are founded, and showing what we conceive to be the most essential points of doctrine established or made probable by the whole inquiry.   And we are by no means disposed to weigh too nicely in the critical balance the novelty or absolute value of an attempt to interrogate nature on such a complicated subject as this, knowing well that a " doctrine *entirely* new," which M. Sédillot admits he has not succeeded in compassing, is more than likely, in so old a controversy, to be a doctrine entirely false.

In order to place our readers fully in possession of the evidence on this important subject, it will be necessary to lay before them a sketch, such as our limits will permit, of the doctrine of purulent infection considered in a historical point of view.   In this we shall be indebted partly to M. Sédillot's first chapter, and partly to other sources.

The occurrence of visceral abscesses in considerable numbers, especially in the lungs and liver, after operations and wounds, has long been a subject of remark with surgeons ; and from the connection of these phenomena with a peculiar form of fever and other grave constitutional symptoms of a typhoid kind, the idea of an infection of the blood has almost necessarily arisen.   Some traces of such a doctrine may be gathered from the literature of medicine even in the earliest periods ; but the terms in which the early humoralists allude to a supposed vitiation of the fluids in these and other cases of secondary abscess, show no more distinct appreciation of the source of such affections than the collateral doctrines of metastasis or sympathy, employed by other writers of the solidist school.   The idea, however, of a purulent diathesis, determined by some changed condition of the fluid, appears to have occurred to Ambrose Parè as the cause of the secondary abscess after wounds.

The earliest distinct statement of the doctrine of an infection of the blood by pus is in the writings of Boerhaave, who supposed that pus was sometimes absorbed " by the eroded mouths of lymphatic or sanguineous vessels ; mixing with the blood, infecting it,

and becoming collected in the viscera,"[1]—thus leading to many grave diseases, in regard to which, however, he gives no details. Morgagni, who wrote some years later, adduced a very considerable number of instances of secondary abscesses, in connection chiefly with wounds of the head; and described the formation of these abscesses in the lungs and liver by the softening and suppuration of small tubercles. These secondary deposits he considers to be the result of minute particles of pus circulating in the blood, causing obstruction in the smaller vessels, and thereby giving rise to a much greater generation of pus than what was brought thither.[2] As to the primary source of admission of the pus into the blood, Morgagni offers no opinion. Quesnay unites the doctrine of Boerhaave with that of Morgagni, considering the origin of secondary abscesses to be due to the absorption and diffusion of pus through the blood, and the excitation of inflammation by it in distant organs.

Till the researches of Hunter, however, in 1784, on the inflammation of the veins, the idea of a purulent infection of the blood must be regarded as purely hypothetical, the admixture of pus with the circulation having never been seen by any observer. In the " Transactions of the Society for the Improvement of Medical Knowledge," Hunter described the coats of the veins as subject to three forms of inflammation—the adhesive, suppurative, and ulcerative; and indicated that the products of the suppuration found their way into the general circulation, where they gave rise to severe symptoms, and even death. This direct observation was certainly calculated to lend great importance to the opinion of purulent infection, as entertained by Boerhaave and Morgagni; but Hunter does not seem to have been acquainted with the expressions and observations of these authors; and, though he showed that the admission of pus was often attended by dangerous and fatal results, was apparently not aware of the connection of these with metastatic abscesses in the internal viscera.

It is curious to observe that, probably from the advancing solidism of the schools, the connection of Hunter's doctrine of inflammation of the veins with the hypothesis of purulent infection of the blood leading to secondary abscess, was not fully perceived till long afterwards. Indeed, this latter doctrine appears to have been completely unnoticed by subsequent writers; and even those who show an acquaintance with the connection between the affection of the veins and certain constitutional states, such as the puerperal fevers, ànd some forms of diffuse cellular inflammation, ascribed these conditions to the extension of the inflammation along the internal membrane of the veins as far as the centre of the circula-

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[1] Boerhaave—Aphorismi, 406.
[2] Morgagni—De Sed. et Caus. Morb., epist. li., art. 22, 23.

tion.[1] On the other hand, we find in the works and memoirs of this period, and even so much more lately as in the second part of Mr Travers' work on Constitutional Irritation (published in 1835), many evidences of a tendency to return to the doctrines of metastasis and nervous sympathy, in explaining the occurrence of secondary abscesses. In 1823, in his inaugural thesis, however, and again more fully in 1826, M. Velpeau[2] lent his powerful aid to the establishment of a pathology of secondary abscess, founded on doctrines similar to those of Boerhaave and Morgagni. He contended that the suppurating tubercles, so often found in the lungs and liver in persons who had died after operations, were the result of pus absorbed into the general circulation; that these affections, as well as a peculiar empyema which occurs in such cases, were rarely attended by well-marked local symptoms; and that, when their existence was undoubtedly ascertained, they had always proved fatal, being uninfluenced by treatment, and, in particular, having their development favoured by bleeding. M. Velpeau, however, does not allude to the connection of these abscesses with the affection of the veins described by John Hunter; and this is not surprising, seeing that M. Breschet, who translated Hodgson's work, and had given a most elaborate description of phlebitis in the notes to the French edition, had also entirely overlooked the connection of it with visceral abscesses.

It was the memoir of M. Dance, published in 1828-9, in the "Archives Générales de Médecine," and the paper of Mr Arnott, about the same time, in the "Medico-Chirurgical Transactions," vol. xv., that for the first time fully connected the Hunterian pathology of the veins with the theory of purulent infection of the blood. These papers demonstrated the presence of pus in the blood as the cause of metastatic or secondary abscesses after operations, and gradually led to the very general recognition of phlebitis as the most common, if not the only, cause of the existence of pus in the blood. M. Dance alleged that three orders of symptoms existed in phlebitis—the first, local, without fever; the second, with more or less of general symptoms superadded to the local, and caused by the extension of the inflammation; and a third, characterised by shiverings, prostration, great alteration of expression, delirium, soft pulse, difficult respiration, &c., and caused by the passage of pus into the blood, and the various complications to which it gives rise. This doctrine may be considered as representing, not only the opinions of M. Dance, and a majority of the French surgeons since his time, but also that of many British surgeons and pathologists.

[1] An exception must be made in favour of Hodgson, who, in his "Treatise on the Diseases of the Arteries and Veins," states explicitly the doctrine of purulent infection from phlebitis, connecting it with a peculiar form of fever of a typhoid kind, and giving instances of phlebitis from venesection, and also in the uterine veins after delivery. Ribes also ("Mémoires de la Soc. Méd. d'Emulation") notices this last condition.

[2] Révue Médicale, vol. iv.

The theory of Mr Arnott coincides in the main with that of M. Dance, in asserting the connection of the local symptoms, usually called inflammation of the veins, with secondary abscess, and the dependence of the latter and the general fever upon the products of the inflammation being carried into the general circulation. He brings many examples to prove that the inflammation of the veins rarely extends along their coats far in the direction of the heart; and that, therefore, the theory maintained by Abernethy, Carmichael, and partially by Travers, that the constitutional affections were owing to the extension of the inflammation to the central organ of the circulation was inadmissible. He reverts to the views of Hunter, as to the admixture of pus with the blood, and collates the observations and opinions of a considerable number of authors, showing the connection of puerperal fevers, and other grave constitutional disturbance after wounds, with this cause. He gives a detailed account of numerous cases, in which the lungs and pleuræ, the cellular tissue, the joints, the eye and the substance of the heart, were the seat of secondary inflammations; and he points out the similarity of those inflammations with those occasionally found after childbirth,—and in some cases of diffuse cellular inflammation from dissection wounds. He indicates his opinion, that all these affections are probably owing to inflammation of the veins, and the discharge of the products of that inflammation into the circulation; but thinks it not absolutely necessary that the inflammation should have reached the purulent stage; and adduces as proof of this, the supervention of general symptoms only four hours after ligature of the saphena, in a case narrated by Dr Hodgson.

The almost simultaneous publication of these two memoirs led, both in France and England, to the very general adoption of the view that phlebitis and purulent infection were identical affections; or, at least, that the latter was invariably caused by the former. Many modifications of this opinion, however, continued to be held by surgeons; and some, like Mr Travers, preferred still to explain, by the laws of sympathy and metastasis, the remarkable series of connected phenomena which had been so repeatedly observed. Others ascribed the constitutional affections to the absorption of pus, altered by putrefaction, or otherwise; and considered the inflammation of the veins as a secondary circumstance.

We shall not attempt, in the present slight sketch of the history of this very complicated subject, to represent all the modifications of doctrine which are held by the chief surgeons of the day. We must pass over the excellent descriptions of M. Maréchal, and review shortly the experiments of M. Cruveilhier, and those of MM. Castelnau and Ducrest, which will prepare the way for the consideration of M. Sédillot's treatise.

M. Cruveilhier's experiments on the injection of various substances into the blood-vessels, were in some respects a repetition

of those of Gaspard, which appeared in the first volume of Magendie's "Journal de Physiologie." He showed that when fluid mercury, or a substance not capable of being eliminated by the glands, was injected into one of the systemic veins, it was carried, in the course of the circulation, to the capillaries of the lungs, and there deposited, small abscesses being formed, each of which contained a brilliant globule of mercury in its centre. If the mercury was injected, on the other hand, into the mesenteric veins, or the branches of the portal system, it underwent a similar elimination by ulceration and suppuration in the tissue of the liver.

M. Cruveilhier also found, that irritating substances, solid or fluid, if detained in the veins of a limb, caused disseminated abscesses there; and he was thus led to the general proposition, that "any foreign substance introduced into the venous system, and not capable of elimination by the glands, was followed by visceral abscesses, exactly similar to those which occur after wounds and operations, and that these abscesses are the result of a capillary phlebitis of these viscera."

We shall not now stop to consider the latter part of this proposition, which eventually led to one of the most gratuitous doctrines in modern pathology,—that of the dependence of all inflammations on capillary phlebitis. But it is quite evident that the first statement, though somewhat too general and sweeping in its form, threw great light on the *probable* mechanism by which the abscesses after operations were produced. We cannot, in the least degree, sympathise with the objections of M. Sédillot to these experiments. The want of perfect resemblance between the abscesses produced by mercury, and those supposed to be produced by purulent infection, in no way destroys the importance of the fact, that abscesses are formed in both instances; and that the tendency to their formation is in both greatest in the same organ. The absence of effect from small quantities of pus and other fluids, in the experiments of Gaspard, Cruveilhier, and Trousseau is explained by M. Sédillot's own experiments, and by those of MM. Castelnau and Ducrest, as we shall presently show. Moreover, M. Sédillot is quite wrong in attributing to Cruveilhier the opinion that pus is received into the blood *only* by phlebitis. It is true that his views on this subject are not clear or decided; but the experiment of producing pulmonary abscesses containing mercury, by introducing this substance into the medullary cavity of a bone, shows that his eyes were quite open to the fact of absorption from the divided ends of vessels. It would be more correct to say, that M. Cruveilhier supposed phlebitis to be the *necessary consequence* of the reception of pus or any other foreign body into the veins. He points out, however, the great difference between *true* absorption, such as takes place from intact veins, and the reception of foreign substances unchanged (*en nature*) into the circulation; and ascribes the formation of secondary abscesses only to

the latter process,—a fact which he illustrates by their non-forma-
tion even in the course of the most severe salivation produced in
dogs, by rubbing mercurial ointment into the skin.

We think, therefore, that M. Cruveilhier's experiments, and
part, though not all, of his own deductions from them, must be
allowed to form one of the greatest advances in the whole history
of the subject of purulent infection. But the credit remains to
MM. Castelnau and Ducrest of having first developed the experi-
mental result, that pus, when artificially introduced into the circu-
lation by a vein in sufficient quantity, produces a succession of
abscesses much more closely resembling those of the true purulent
infection, than those produced by mercury or any other mineral
substance. It appears that metallic mercury develops only very
small tubercular-looking abscesses, containing but little fluid; while
pus gives rise to red condensed nodules of hepatisation of pul-
monary tissue, succeeded by softening and suppuration over a con-
siderable extent, as in the true purulent infection. Again, the
abscesses from mercury are always in the lungs, while those from
pus may be in other tissues. Finally, the *combination* of symptoms
is different, although there is, perhaps, no single symptom neces-
sarily present in the one case that may not be so in the other.[1]

We now enter upon the consideration of M. Sédillot's researches.
In performing this task, we shall endeavour to connect the chief
results of his own doctrinal exposition, as contained in the fourth
chapter of the work, with a view of his experiments and obser-
vations in the two preceding chapters. We may observe, however,
that this attempt will be, in the present instance, attended with
more difficulty than usual, owing to the extreme and unnecessary
lengthening out of details, and the absence of any proper analysis
of the experimental and clinical data; the author having thrown
upon the reader a duty which he ought to have performed himself,
and the accurate performance of which, would, we think, have pro-
bably led him to modify some of the results which he so confidently
announces.

The doctrine of M. Sédillot, as regards the pathology of puru-
lent infection, may be very shortly stated. He believes the well-
known symptoms to be always immediately dependent on the
presence of pus in the circulation, and on this cause alone. He is
no exclusive champion of any single mode of explaining the intro-
duction of pus into the blood, believing that it may be derived either
from a wound, an ulcer, an abscess, or a phlebitis. However, ac-
cording to M. Sédillot, the globules are the only part of pus essen-
tial to purulent infection, the symptoms of which they probably
produce by their irritant action in the systemic and pulmonary

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[1] Memoires de l'Académie de Médecine.   T. XII. 1846.   On Multiple
Abscesses.

capillaries; otherwise the most common source of infection is an inflamed vein or a suppuration in contact with the *open mouths* of veins. M. Sédillot, therefore, does not admit the possibility of such an accident with the veins intact, unless it be from the problematical source of inflamed lymphatics or arteries.

We shall not follow our author through the whole of his arguments in favour of the doctrine, that "pus in the blood is the real cause of the phenomena described under the name of purulent infection or pyæmia."[1] What he has himself added to the evidence of the existence of pus in the blood as a cause for metastatic abscesses, &c., may be placed under two heads:—1st, the microscopic detection of pus in the blood; 2d, the results of artificial injection of pus and other fluids in animals.

With regard to the first head, M. Sédillot is at much pains to prove the accuracy and value of the microscopic test of pus; and, in particular, to show that its accuracy, as regards pus in the circulation, is not affected in any case by the liability of the pus globules to be confounded with the white globules of the blood. This is a doctrine we can by no means admit, notwithstanding the authority of Lebert, whom M. Sédillot adduces as a supporter of his opinion. We, on the other hand, believe with Henle, Donné, and Virchow, that it is quite impossible, under many circumstances, to distinguish these two classes of globules from one another; and that the attempt to do so must inevitably lead to confusion. We are more than ever convinced of this by the note of M. Lebert, in p. 268 of M. Sédillot's treatise on the differences of the globules, which places the definition of each on characters so subject to variation as to be in our view self-condemnatory. Nor does M. Sédillot's assertion, that the white globules never exceed the red in number, at all shake our opinion of the insecurity of this test; for there are now a sufficient number of cases on record in which the blood has been charged with white globules, indistinguishable from pus globules, to a much greater extent than in any of M. Sédillot's cases

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[1] The argument would indeed be fruitless, for we have, in the enunciation of this proposition, a fault in logic not uncommon in medical writings and ideas. M. Sédillot denies the name of pyæmia to affections very closely allied in phenomena to purulent infection, when these affections are not owing to pus in the circulation (see the distinctions between purulent and putrid infection *passim*); and, having made this limitation of the term, he argues (in a circle) for pus in the circulation as its true cause. In like manner, he gives the name pyæmia to several cases which would not have been so called, but for the strong presumption of the existence of pus in the circulation. Hence the frequency of his cures (see the last ten observations), and the assertion of the trivial character of the disorder in many cases.

We take this opportunity of entering our protest against this most unnecessary and deceptive word *pyæmia*. It can never be used in practical medicine without leading to such confusion of ideas as the above; and we hope that, like the rest of M. Piorry's pseudo-scientific coinage, it will never become currency in this country.

of pyæmia."[1]   While, therefore, we have no doubt, on other grounds, of the existence of pus in the blood in this disease; and no doubt that M. Sédillot has seen it microscopically, we object altogether to the application of this test alone, as an ultimate appeal in cases where, on other grounds, a decision cannot be arrived at.

The experiments on animals, which are very elaborately detailed, appear to M. S. to prove absolutely the following propositions:— 1st, that pus, when injected into the veins in sufficient quantity, always determines metastatic abscesses and death, and, in minor quantity, is usually followed by recovery; 2d, that no other animal substance produces symptoms of purulent infection; 3d, that the globules alone, and not the serosity, are concerned in these effects.

As regards the first position, we think that M. Sédillot's experiments, like those of MM. Castelnau and Ducrest, satisfactorily prove that the failure of former experimenters to produce metastatic abscesses by the injection of pus, arose from insufficient quantities having been employed. In twelve instances pure fresh pus was employed; in eleven others pus more or less altered by decomposition; in two (Experiments 31 and 32) the character of the pus is not stated. The quantity was from about half a gramme[2] to thirty grammes. The general result of the experiments was, that when small quantities (under fifteen grammes) of perfectly fresh pus were injected, the animals usually recovered; in some instances, after more or less febrile disturbance and oppression of respiration. In six such experiments (Nos. 1, 2, 3, 4, 16, 19), only one animal died from the effects of the injection (Experiment 16); another (19), was killed five hours after the operation, with the view of observing the commencement of the pulmonary lesions. When a considerable quantity of pus was injected *at once*, the fatal effect was occasionally very rapid; but when the animal survived long enough, visceral lesions were always observed, sometimes amounting merely to nodulated inflammatory points, and sometimes to well-formed abscess. We cannot discover that the gravity of the symptoms has more than a very general and slight relation to the amount of pus injected; for we have one animal (16) killed by about eight grammes in the most rapid manner, while others (5, 6) withstood the injection of fifteen and twenty-one grammes; the weight of one at least of these latter animals (5) being less than that of the one which succumbed so easily. Other instances of variability in the results might be adduced did our space permit; but it is sufficient to point out the fact.

When sanious or fetid pus was injected, a much smaller quantity

[1] See, for a collection of references on this head, Med. Vereinszeitung, 1846, Nos. 34-36, and 1847, Nos. 3, 4 ; and Virchow and Reinhardt's Archiv. für Path. Anat. and Klinische Medizin, vol. i. p. 563. The English reader will find two cases, by Drs Craigie and Bennett, in the Edin. Med. and Surg. Journal. It is remarkable, that in these cases of " white blood," there were no symptoms of purulent infection.
[2] A gramme is 15·434 grains troy.

was fatal; indeed, of eleven animals subjected to this experiment in all its different degrees, we can only find one (Experiment 7) which recovered, the quantity in this case being two cubic centimetres or four grammes. A precisely similar quantity proved fatal in a few hours in Experiment 21. The lesions found in these cases were more or less similar to the others, but partook more decidedly of a gangrenous character, and are ascribed by M. Sédillot to the combination of two sorts of infection (septico-pyèmie).

As regards the proof, that no other substance except pus produces symptoms like purulent infection, we think the evidence far from perfect, the number of trials being far too small to establish so general a proposition. Blood was injected in four instances (Experiments 8–11); in one of these immediate death took place, portions of clot having been left in the blood; in the others, recovery took place with very slight symptoms. Thirty grammes of serum produced (in Experiment 12) " un malaise très-marquée pendant trois jours" in a strong dog, but ultimately no bad effects. Chyme was injected in two cases (13, 14); in both the animals recovered, after serious symptoms lasting for a week, and very similar apparently to those of purulent infection; and here it is to be observed, that the quantities were very small (three and a-half grammes and four grammes); and that in one case there were all the symptoms of visceral abscess, but no ulterior examination was made to prove this point. So far as these experiments tend to prove anything, therefore, we think they are rather opposed to M. Sédillot's doctrine,—that pus is altogether peculiar in its effects.

Experiments 35 and 36 show the results of the injection of putrid water. In both cases the animals died. In the first only ten grammes were injected, death taking place in twenty-seven hours. The lungs were much congested and gorged. In the second about twenty-eight grammes were injected in successive portions; death took place in four days, from gangrene of the lungs without abscess; this being what M. Sédillot considers the pure form of the *putrid* infection,—a different thing, in his opinion, from the purulent. There can be little doubt, on considering the results of the injection of putrid, as compared with fresh pus, that the state of decomposition imparts a peculiar virulence to the poison, whatever it be, which is in action in these cases.

We now pass to the experiments illustrating the comparative effects of the globules and the serosity of pus. The globules were separated and injected (diluted with water), in three cases (Experiments 33, 44, 45). The effects were so similar to those of pus, that we need not enter into details; they were fatal in all the three instances. The serosity was injected in seven instances. In three of these (37–39) it was putrid, and produced death with gangrenous lesions of the lungs. In the four remaining cases (34, 40, 41, 42), three were fatal at periods from the fifth to the eighth day. One of these had distinct metastatic abscesses, which M. Sédillot ascribes

to an accidental phlebitis. Of the other two, however, where no
such accident occurred, one had circumscribed indurations of the
lungs, each containing " a cavity filled with a reddish mucous fluid ;"
the other had, on the fifth day, " ecchymotic patches, with a black-
ish central point," in both lungs. In experiment 52 recovery took
place after an enormous quantity (160 grammes) of serosity had
been injected.

This last experiment certainly gives ground for supposing the
poisonous element of pus to reside more in its solid than in its fluid
portions. But with the invariably fatal results of the other expe-
riments before us, we think considerable caution is necessary in ar-
riving at M. Sédillot's conclusion, that the globules only are capa-
ble of producing purulent infection. We cannot imagine how he
makes such sharp distinctions between abscesses in the lungs and
the gangrenous lesions. We are very sure that they are often seen
united in the same subject, and that to any one else than M. Sédil-
lot, " pustules noirâtres un peu coniques, indurées à leur base, et
terminées par une surface grisâtre" would have seemed to present a
very close analogy to the metastatic abscesses, properly so called.

On the whole, the result of these experiments seems to us to leave
considerable room for further prosecution of the subject. It is pro-
bably now sufficiently determined that pus is capable, when injected
into the blood, of producing the visceral abscesses usually as-
cribed to phlebitis or purulent infection ; but it does not appear by
any means so clear that their effect is derived from any poisonous
principle resident in the globules *alone ;* and the varying effects
of similar quantities of pus would rather induce us to ascribe
its poisonous power to some matter not yet isolated, occurring
in variable quantity in pus and other organic debris, and subject
to modification, both in the nature and violence of its poisonous
effects, by the progress of decomposition. That there is a dis-
tinctly ascertained infection of the blood, probably of a specific
character, in these cases, we are ready to admit; but we cannot
forget the illustration which the action of this, and probably of
many similar poisons, receives from the interesting experiments
of Gaspard and Cruveilhier with mercury, and we might also add
those of Mr Blake,[1] in which he shows the tendency of many solu-
ble substances, when injected in quantity into the blood, to be de-
tained in the capillaries, either of the lungs or of the system. That
there should be varieties in the action of the different poisons, and
of the same poison under different circumstances, is only what might
be expected ; but it is also possible that poisons similar or identical
in action, or even in nature, may be generated under different cir-
cumstances ; and reflection on the many links yet wanting in the
chain of evidence, makes us unwilling to admit pus or its globules,
as the sole and absolute source of purulent infection, even were there
no facts tending to disprove this exclusive solution of the problem.

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[1] Edinburgh Medical and Surgical Journal, vol. lvi. p. 401.

We cannot here enter at large on the circumstances which induce us to believe that the pathology of this subject is yet destined to undergo very great modifications. We can only point to the fact formerly alluded to, of the development of pus, or, at least, a substance morphologically similar to this product, within the blood itself, in some cases of abdominal disease, as having an important bearing, both on the evidence and on the pathology of "pyæmia." We would also refer to the researches of Henle,[1] Virchow,[2] and others, on the anatomy and diseases of the blood-vessels, as tending to limit the supposed operation of inflammation of the veins as a cause of pus in the circulation, or at least to alter very much the pathology of phlebitis, as generally received in this country and in France.

M. Sédillot's views on the exciting and predisposing causes of pyæmia have no great novelty. We pass them over, therefore, to say a few words on symptoms. Those regarded by the author as most constant are shiverings or marked alternations of temperature; accelerated respiration, amounting to 30, 40, or 50 inspirations in a minute, accompanied by mucous and subcrepitant râles in the chest, without any distinct affection of the percussion, and perhaps succeeded by pleuritic symptoms; a leaden or jaundiced hue of the integuments, with sudamina, pustules, or subcutaneous abscess; rapid and striking emaciation, with collapse of the features; prostration and stupor, with typhoid delirium; frequent, irregular, and soft pulse. In addition to these, but not so constantly developed, M. Sédillot has noticed suppression or altered character of the discharge from the wound; dryness of the tongue and lips as in typhoid fever (often absent in the earlier stages); pain in one or more joints, with effusion and muscular abscess; epigastric pain, and, in the last stages, subsultus tendinum, retention of urine, and paralysis. Superficial ulceration of the cornea and suppuration of the conjunctiva sometimes occur, but M. Sédillot has not witnessed the destruction of the globe of the eye by suppuration described by M. Velpeau, and also by Arnott, and other English writers. Diarrhœa, hæmorrhages, and fetid sweats, he considers to characterise rather the putrid than the purulent infection.

Admitting that purulent infection has no *pathognomonic* sign, M. Sédillot lays down the following rules for its diagnosis.

" Any person having a suppurating wound, and attacked by irregular shiverings, with laboured and frequent respiration, a leaden and icterous tint of the integuments, rapid prostration and emaciation, is, in our eyes, the subject of pyæmia. We would give a similar opinion, if, in the absence of shivering, these symptoms occurred along with dryness of the wound or alteration of pus. If phlebitis were present, we should consider an attack of pyæmia to have supervened, if the local symptoms were complicated with shivering, prostration, yellowish colour of the skin, and deep accelerated inspirations."—P. 448.

[1] Handbuch der Rationellen Pathologie, vol. ii. p. 497.
[2] Virchow—Archiv. für Path. Anat., vol. i. p. 272.

It is worth while observing, with regard to the so-called latency of the symptoms of metastatic abscess in the viscera, that M. Sédillot believes this to be entirely owing to the typhoid condition of the patient, by which the painful character of the disease is masked. He thinks that this term has been much abused in order to cover faults of diagnosis.

We have already remarked, that the frequency and comparative curability of purulent infection in M. Sédillot's practice, as compared with that of many surgeons, are probably owing in part to the difference of his definition of the disease. This, we think, will be evident from the following remark :—

"We believe that pyæmia is among the most common complications of suppuration, only that when cured it is frequently overlooked, *from the false idea which exists, that every case of purulent infection must be accompanied by metastatic visceral abscess.*"—P. 34.

An examination of the experiments and observations will, however, we think, justify M. Sédillot in his conclusion as to existence of slight and curable forms of this disorder; while he has also apparently a strong case in favour of the cure even of some very desperate cases.

The treatment recommended by M. Sédillot does not, on the whole, differ much from that usually followed in this country. In all cases prophylactic measures are to be carefully attended to, and the hygienic circumstances of patients maintained as well as possible. Abscesses are to be freely opened, and all undue pressure in suppurating wounds avoided. Obstinate and ill-conditioned abscesses are to be cauterized. Lastly, the author strongly recommends the application of the actual cautery over the wounded surface, so as to obliterate the veins, and substitute an adhesive for a suppurative phlebitis. In a few instances he has amputated the affected part with success ; but he hesitates to recommend this method. On the various specifics that have been recommended against purulent infection, M. Sédillot reposes no confidence whatever.

Our readers who have followed us in this analysis, must be already aware both of the merits and defects of the work before us. We shall, therefore, absolve ourselves from discussing them in detail, more especially as the importance of the subject has protracted this article to an unexpected length.

A Treatise on the Inflammations of the Eyeball. By ARTHUR JACOB, M.D., F.R.C.S., &c. Dublin, 1849.

THIS important contribution to the science of ophthalmology originally appeared, during the last few months, in the form of detached essays, published in the " Dublin Medical Press." Of the high qualifications for such a work possessed by Dr Jacob there can be no

question;—the profession will receive with respect anything which emanates from so competent an author. The treatise is addressed " more to physicians and surgeons in general practice, and to students, than to those more exclusively devoted to this special branch of the healing art."

> " This I do because I think that the study of these diseases should be restored to its original conspicuous place amongst the most favoured topics of medical instruction, rather than abandoned to a more limited cultivation. It may not be prudent to say so, but I cannot refrain from observing, that the more diseases of the eye have been engrossed by persons laying claim to their special treatment, the less have they partaken of the general improvement which time has effected in medicine and surgery. It cannot, I think, be denied, that physicians and surgeons having neglected the subject from a belief that it was under the particular consideration of others, became less familiar with it; and now, when they would resume it, are less competent to do justice to its merits. I know that they will not admit the truth of this observation, and that many of them will consider it unjust; but I venture to make it, because I believe that the sooner its correctness is established the sooner will the defect it indicates be repaired. I do not, however, mean to say that diseases of the eye have not had their due share of attention from surgical writers; on the contrary, I consider that no department has been more favoured; what I wish to inculcate is, that practitioners in general have not paid that attention to the subject which its importance demands, and which is necessary to give weight to their claims to an acquaintance with it."—P. iv.

The author enters his protest against the elaborate jargon of mangled Greek, which has been permitted to perplex ophthalmic science; and throughout his own work, preserves a simplicity of nomenclature infinitely more classical and instructive. He finds fault, too, with the extreme minuteness of classification under which the inflammations of particular structures in the eye have been arranged, asserting that, although these apparent distinctions have an air of method and accuracy, they are not serviceable in practice, because not founded upon correct pathology, but upon changes observed during the progressive inflammation of the whole organ.

Thus he objects to the term *iritis*, because the iris is never inflamed without corresponding inflammation of the sclerotic, and generally of other tissues. This doctrine will, we believe, be disputed by many who have made the diseases of the eye their special study; and we would ourselves do battle for the word *iritis*—an old, convenient, and expressive term,—not synonymous with "inflammation of the eyeball," the phrase which Dr Jacob wishes to substitute. There is no greater danger of forgetting, when *iritis* is spoken of, that various structures may be, and usually are, inflamed simultaneously with the iris, than of neglecting, when presented with a case of "inflamed eyeball," to investigate the condition of the iris.

Although, in this matter of mere words, Dr Jacob may have carried reform too far, his whole work will be found most instructive and thoroughly practical—simple, and yet not obnoxious to the charge of *popularising* a subject of high scientific interest.

Part Third.

CLINICAL REPORTS, LECTURES, ETC.

CLINICAL MEDICINE—PROFESSOR BENNETT.

THE CLASSIFICATION AND DIAGNOSIS OF CUTANEOUS DISEASES.

Notwithstanding the great advances which have been made in our know-ledge of diseases of the skin, it cannot be denied that very inexact notions pre-vail regarding this class of disorders. I do not here allude to the eruptive fevers, which, from their frequency and danger, necessarily demand the atten-tion of every professional man, so much as to the lighter and more chronic disorders to which the skin is subject. Ignorance, however, here, although it seldom occasions danger to human life, produces great inconveniences, exas-perates the progress of other maladies, renders life miserable, and frequently destroys those social relations and ties which constitute happiness.

A lady was seized with an eruption on the genital organs, which rendered the slightest contact unbearable. Her husband suspected that she laboured under syphilis, and accused her of infidelity. A medical man, who was con-sulted, pronounced her disease venereal,—a separation took place between the parties ; the lady always maintaining her innocence, but anxious to escape the unfounded suspicions and ill-treatment of her husband. Mercury and an anti-venereal treatment were continued for some time, but the disease increased in intensity. At length another physician, skilled in the diagnosis of skin diseases, was consulted, who pronounced it to be an eczema rubrum, quite unconnected with syphilis ; and, on the application of appropriate remedies, a speedy cure confirmed his diagnosis.

A lady in the country sent one of her servants into town, to obtain advice for an eruption which had broken out on her body, and which she was afraid might be communicated to her children. The practitioner consulted was much puzzled, and asked me to see the patient, who, according to him, was labouring under a rare form of skin disease. I found a herpes zoster extend-ing round one half the trunk, and told him it would disappear spontaneously in a few days, which it did.

Nothing is more common in practice than to meet with cases among ser-vants, where prurigo has been mistaken for itch, causing great alarm to the family, and much injury to the servant. The various diseases of the scalp also are continually confounded together. Indeed, examples might easily be accumulated, proving the inconvenience which an unacquaintance with skin diseases may occasion both to patient and practitioner. A young medical man is especially liable to be consulted in cases of trifling skin eruptions ; and nothing is so likely to establish his credit, as the ready diagnosis and skilful management of such disorders, especially when (as frequently happens) they have been of long standing, and baffled the efforts of older practitioners. Conceiving then that this subject deserves more careful consideration than it usually meets with in a clinical course, I propose directing your attention to the classification and general diagnosis of these disorders, before alluding to the individual cases which are in the wards.[1]

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[1] Since this lecture was delivered, it has been decided on, with the consent of the managers of the Infirmary, that the two wards, Nos. 12 and 2—which have for some

CLASSIFICATION.—Skin diseases are so various in appearance and in their nature, that many experienced practitioners have endeavoured to facilitate their study by arranging them in groups.

There are three kinds of classification which deserve notice :—1st, The artificial classification of Willan ; 2d, the natural arrangement of Alibert ; and 3d, a pathological arrangement founded on the supposed morbid lesions.

Of these, the best, and the one which the most facilitates the study of cutaneous diseases, is certainly that of Willan. No doubt it has its faults and inconveniences, but many of them have been removed by Biett. This classification is founded upon the character presented by the eruption, which, when once known, determines the disease. It is an old saying, that it is much easier to play the critic and to find fault, than to construct something better. This remark may be well applied to those who have ventured to set aside Willan's arrangement and bring forward others. The natural classification of Alibert can never be followed by the student, and presupposes a considerable knowledge of the subject. The pathological arrangement again is decidedly faulty. The morbid anatomy and pathology of many skin diseases is unknown ; how, then, can we found a classification upon them ? Indeed, the very principles on which such classifications are based, are continually undergoing changes as pathology advances.

On the whole, therefore, the arrangement best suited to the student and for practical purposes is that of Willan and Bateman, with the modification introduced into it by M. Biett.

Definitions.—Before we can proceed to refer any particular disease to its appropriate class, we must be acquainted with the characteristic appearances which distinguish the different orders. They are as follows :—

1. *Exanthema* (Rash).—Variously formed irregular sized superficial red patches, which disappear under pressure, and terminate in desquamation.

2. *Vesicula* (Vesicle).—A small, acuminated, or orbicular elevation of the cuticle, containing lymph, which, at first, clear and colourless, becomes often opaque or pearl-coloured. It is succeeded either by scurf or a laminated scab.

3. *Bulla* (Bleb).—This differs from the vesicle in its size, a large portion of the cuticle being detached from the skin by the interposition of a watery fluid, usually transparent.

4. *Pustula* (Pustule).—A circumscribed elevation of the cuticle, containing pus. It is succeeded by an elevated scab, which may or may not be followed by a cicatrix.

5. *Papula* (Pimple).—A small, solid, acuminated elevation of the cuticle, in appearance an enlarged *papilla* of the skin, commonly terminating in scurf, and sometimes, though seldom, in slight ulceration of its summit.

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time been in disuse—shall be resumed by the professors, for the purposes of clinical instruction. It has, in consequence, been arranged by the medical faculty, that one of these shall be set aside for the treatment of diseases peculiar to women and children, and Dr Simpson having expressed his willingness to take charge of it, he will, in future, give clinical lectures on this important department of practical medicine. The faculty has decided that the other ward shall be devoted to the reception of skin diseases ; so that in this department, also, the opportunities of study will be greatly increased. Whilst these, and a few other arrangements that have been made, will, it is hoped, be of service in our efforts to extend clinical instruction, it is, I think, to be regretted that the managers have rejected other parts of the plan which the medical faculty laid before them at the commencement of the session. No doubt the concessions granted, enable us to make steps in advance; but they are not sufficient. We must keep pace with other schools.

On this subject I have only to repeat, what I stated at the commencement of the session (see January Number of this Journal), that "we shall never rest contented until the Edinburgh school of medicine is complete in all the means necessary for studying every kind of disease at the bedside."

6. *Squama* (Scale).—A lamina of morbid cuticle, hard, thickened, whitish, and opaque, covering either small papular red elevations, or larger deep-red, dry surfaces.

7. *Tubercula* (Tubercle). — A small, hard, indolent, primary elevation of the skin, sometimes suppurating partially, sometimes ulcerating at its summit.

8. *Macula* (Spot).—A permanent discoloration of some portion of the skin, often with a change of its structure. These stains may be white or dark-coloured.

The different appearances thus described characterise the eight orders of Willan and Bateman, viz. 1. Exanthemata; 2. Vesiculæ; 3. Bullæ; 4. Pustulæ; 5. Papulæ; 6. Squamæ; 7. Tuberculæ; 8. Maculæ. The principal modifications made by Biett are removing from these groups certain diseases which have no affinity with them, and constituting them into extra orders of themselves. Thus he makes altogether fifteen orders, as seen in the following classification given by his pupils Schedel and Cazenave, which also indicate the subdivisions into which each order is divided.

ORDER I.—*Exanthemata.*
Rubeola.
Scarlatina.
Erythema.
Erysipelas.
Roseola.
Urticaria.
ORDER II.—*Vesiculæ.*
Eczema.
Herpes.
Scabies.
Miliaria.
Varicella.
ORDER III.—*Bullæ.*
Pemphigus.
Rupia.
ORDER IV.—*Pustulæ.*
Variola.

Vaccinia.
Ecthyma.
Impetigo.
Acne.
Mentagra.
Porrigo.
Equinia.
ORDER V.—*Papulæ.*
Lichen.
Prurigo.
ORDER VI.—*Squamæ.*
Psoriasis.
Pityriasis.
Icthyosis.
ORDER VII.—*Tuberculæ.*
Lepra Tuberculosa.
Lupus.
Molluscum.

Framboesia.
Cheloidea.
ORDER VIII.—*Maculæ.*
Lentigo.
Ephelides.
Nævi and Vitiligo.
ORDER IX.—*Purpura.*
X.—*Pellagra.*
XI.—*Radesyge.*
XII.—*Lepra Astrachanica.*
XIII.—*The Aleppo Evil,* or *Malum Alepporum.*
XIV. — *Elephantiasis Arabica.*
XV.—*Syphilidæ,* or *Syphilitic Eruptions.*

Even this classification is very complicated, and appears to me to admit of still further modifications, which will render the subject more simple and practical at the bed-side. I shall point out to you, in the first instance, the reasons which have induced me to make these modifications, and then give, in a tabular form, the classification which we shall in future adopt.

In the orders *Exanthemata* and *Pustulæ*, we find several diseases which are characterised by excessive fever, so that they have long been spoken of under the term of eruptive fevers, as well as under that of febrile eruptions. With them, in short, fever is the characteristic, and they are influenced by laws of a peculiar character, altogether different from those which regulate the production of other cutaneous affections. I propose, then, removing these affections from the category of skin diseases altogether, which will only leave three in the first order, namely, erythema, roseola, and urticaria. I am aware that, strictly speaking, these may be accompanied by slight fever, which may also occur in several other skin diseases. But I do not pretend to form a classification which is perfect, or even pathological, but one which some experience in the teaching of these diseases has convinced me is useful and practical for the student.

In the order *Vesiculæ* we find five diseases. I propose cutting out miliaria, as being very unimportant, and a trifling sequela of fevers. Varicella I believe to be a modified small-pox, and I omit it for the same reasons as I do variola.

I propose expunging the order *Bullæ* altogether. We find in it two diseases. The first of these, pemphigus or pompholyx, is a vesicular disease in every point, appearing in successive crops, and forming a laminated scab. Rupia, on the other hand, is evidently a pustular disease, forming a prominent scab, producing ulceration, and leaving a cicatrix. I shall, therefore, add pemphigus to the order vesiculæ, and rupia to that of the pustulæ.

From the *Pustulæ*, for the reasons formerly stated, I expunge variola, vaccinia, and equinia. Mentagra, so far as I have been able to study it in this country, has always consisted of eczema or impetigo on the chin of the male. In syphilitic cases, it is more or less tubercular, and it has been described also as consisting of a vegetable parasite. Although I have never seen the appearance figured by Cazenave (Plate 16), I can understand that such a mentagra might really consist of vegetable fungi. At all events, mentagra is not a special pustular disease. Porrigo means any eruption on the head, whether vesicular, pustular, or squamous. Favus, to which it has long been applied, is undoubtedly a vegetable parasite, and ought, with others of a like nature, to constitute a class of themselves. Hence the class of pustulæ will with us contain only impetigo, ecthyma, acne, and rupia.

The orders *Papulæ* and *Squamæ* remain the same. The strophulus of many English writers is certainly only lichen occurring in the child ; and what has been called lepra, as distinguished from psoriasis, is the latter disease presenting an annular form.

From the class *Tuberculæ* I cut out frambœsia, as being a disease unknown in this country, together with cheloidea, which, as I understand it, means either cancer or tubercle of the skin.

As regards the order *Maculæ*, I place in it, as did Willan, purpura, because, although sometimes it may depend on constitutional causes of an obscure nature, and at others be allied to scurvy, it still, in an arbitrary classification of this kind, constitutes an undoubted spot or macula.

All the other orders of Biett I shall take the liberty of expunging—pellagra, lepra Astrachanica, and malum Alepporum, are unknown in this country. I agree with Hebra in thinking that radesyge is only a modified form of lupus. The elephantiasis Arabica is an hypertrophy of the areolar tissue or chorion, and belongs more to the subject of fibrous growths than that of skin diseases. Syphilitic diseases I do not regard as a distinct order, but as any of the ordinary skin affections, more or less modified by a peculiar state of the constitution.

Whilst I have cut out many diseases from the eight orders originally established by Willan, and subsequently modified by Biett, I find it necessary to add two others, which the advance of pathology and histology shows ought to be considered apart. I allude to those which depend on the presence of parasitic animals and plants, and which may be called respectively *Dermatozoa* and *Dermatophyta*. I am not quite sure whether *every* case of scabies depends upon the presence of an insect. Certainly it is not always discoverable. If this point were established, it would, perhaps, be correct to remove scabies from the order vesiculæ, and place it among the dermatozoa. I must confess I should do this very reluctantly, however, because the peculiar vesicle of that disease is so characteristic. As it is, I shall put acarus among the dermatozoa, although it certainly forms, when present, a constituent of itch. Among the dermatophytes will be placed favus, removed from the class pustulæ and mentagra. Other diseases, such as plica Polonica, and pityriasis, have been considered as parasitic, but the former is unknown in this country, and the latter, though frequently presenting epiphytes among the scales, owes none of its essential characters to this circumstance.

The classification, then, we shall in future adopt is as follows.

ORDER I.—*Exanthemata.*
  Erythema.
  Roseola.
  Urticaria.
ORDER II.—*Vesiculæ.*
  Eczema.
  Herpes.
  Scabies.
  Pemphigus.
ORDER III.—*Pustulæ.*
  Impetigo.
  Ecthyma.
  Acne.
  Rupia.

ORDER IV.—*Papulæ.*
  Lichen.
  Prurigo.
ORDER V.—*Squamæ.*
  Psoriasis.
  Pityriasis.
  Icthyosis.
ORDER VI.—*Tuberculæ.*
  Lepra Tuberculosa.
  Lupus.
  Molluscum.
ORDER VII.—*Maculæ.*
  Lentigo.
  Ephelides.

  Nævi.
  Purpura.
ORDER VIII.—*Dermatozoa.*
  Entozoon folliculor-
    um.
  Acarus.
  Pediculus.
ORDER IX.—*Dermatophytæ.*
  Porrigophyte (Favus)
  Mentagraphyte(Men-
    tagra.)

DIAGNOSIS.—The recognition of skin diseases, and the separating one class from the other, is of essential importance to a proper treatment. On this point I fully agree with a recent writer, who says " the treatment of a great many cutaneous diseases is of but secondary importance, compared with their differential diagnosis. Many of them will get well without any treatment, provided they are allowed to pursue their natural course ; and, on the contrary, a mild and simple eruption, by being mistaken, from a similarity of external appearances, for one of a severe or rebellious character, and treated accordingly, may be aggravated and prolonged for an indefinite period." (Burgess.) This differential diagnosis, however, to the inexperienced, is a matter of great difficulty, because considerable tact is often necessary, not only to discover the original element each disease presents, such as a rash, vesicle, pustule, scale, and so on, but this is often impossible. Under such circumstances the diagnosis is frequently derived from the scab, or other appearances presented, such as the cicatrix. The whole subject has been rendered very confused and complicated by systematic writers, who have often given different names to the same disease, or unnecessarily divided them into forms and varieties. I advise you not to pay any attention to these forms and varieties for the present, and confine your efforts only to the detection of the diseases enumerated in the table under each order ;—and with a view of facilitating your endeavours, the following short diagnostic characters and definitions should be attended to :—

I. EXANTHEMATA.

1. *Erythema.*—A slight continuous redness of the skin in patches of various shapes and sizes.

2. *Roseola.*—Circumscribed rose-red patches, of a circular, serrated, or annular form.

3. *Urticaria.*—Prominent red patches of irregular form, the centre of which is often paler than the surrounding skin.

II. VESICULÆ.

Eczema.—Very minute vesicles in patches, presenting a shining appearance, yielding a fluid which dries into a laminated or furfuraceous crust. The skin is of a bright red colour.

Herpes.—Clusters of vesicles, varying in size from a millet seed to that of a pea, surrounded by a bright red areola. They yield a fluid which dries into a thin incrustation, that drops off between the eighth and fifteenth day.

Scabies.—Isolated vesicles of an acuminated form, commonly seated between the fingers, and flexor surfaces of the arms and abdomen—never on the face.

Pemphigus.—Large vesicles or blebs (bullæ), surrounded by an erythematous circle, the fluid of which forms, when dry, a laminated crust. When chronic, they appear in successive crops, and the disease is called *pompholyx.*

III. PUSTULÆ.

Impetigo.—Small pustules, commonly occurring in groups, and forming an elevated crust.

Ecthyma.—Large isolated pustules, depressed or umbilicated in the centre, and leaving a cicatrix.

Acne.—Isolated pustules situated on a hardened base, which form and disappear slowly. They only occur on the face and shoulders.

Rupia.—Large pustules, followed by thick prominent crusts, and producing ulcerations of various depths.

IV. PAPULÆ.

Lichen.—Minute papulæ occurring in clusters or patches.

Prurigo.—Larger and isolated papulæ generally seated on the extensor surfaces of the body.

V. SQUAMÆ.

Psoriasis.—Whitish laminated scales slightly raised above the reddened surface of the skin.

Pityriasis.—Very minute scales, like those of bran, seated on a reddened surface.

Ichthyosis.—Induration of the epidermis, and formation of square or angular prominences, not seated on a reddened surface.

VI. TUBERCULÆ.

Lepra Tuberculosa.—(Elephantiasis of the Greeks.)—Tubercles varying in size, preceded by erythema and increased sensibility of the skin, and followed by ulceration of their summits.

Lupus.—Induration or tubercular swelling of the skin, which may or may not ulcerate. In the former case, ulceration may occur at the summit or at the base of the tubercles, and frequently extends in the form of a circle more or less complete.

Molluscum.—Pedunculated, globular, or flattish tubercles, accompanied by no erythema or sensibility, occurring in groups. They are filled with atheromatous matter.

VII. MACULÆ.

Lentigo or Freckle.—Brownish-yellow or fawn-coloured spots on the face, bosom, hands, or neck.

Ephelis.—Large patches of a yellowish-brown colour, accompanied by slight desquamation of the cuticle.

Nævi or Moles.—Spots of various colours and forms, sometimes elevated above the skin. They are congenital.

Purpura.—Red or claret-coloured spots or patches, which do not disappear under pressure of the finger.

VIII. DERMATOZOA.

These minute animals require a lens of considerable power to ascertain their characters, which need not be particularised here, as they do not modify the appearances of the diseases previously stated, such as scabies or prurigo senilis.

IX. DERMATOPHYTÆ.

These minute plants also require a high magnifying power to distinguish them. But they communicate peculiar characters to certain cutaneous diseases, as follows :—

Favus.—Bright yellow, umbilicated crusts, surrounding individual hairs, which agglomerate together to form an elevated friable crust, of a peculiar musty or mousey smell.

Mentagra.—Greyish or yellowish dry crusts, of irregular form, originating in the hair follicles of the beard.

In forming your diagnosis, therefore, you will be guided principally by three characters :—1st, The primitive and essential appearance—that is, whether a rash, vesicle, pustule, and so on. 2d, The crust,—whether laminated or prominent, composed of epidermis only, &c. 3d, Ulceration—whether present or

absent ; and if so, the kind of cicatrix. These and other characters I shall point out at the bedside, so as to familiarise you with their appearances.

You will remember that the classification formed by Willan is wholly artificial. It is like the Linnæan classification of plants. The difficulty for the learner is to recognise the essential characters, the more so as many diseases pass through various stages before the essential character is formed. Thus herpes presents, 1st, a rash; 2d, papulæ ; 3d, vesicles; 4th, pustules; yet the disease is considered vesicular. Ecthyma passes through the same stages, yet it is considered pustular.

Again, it not unfrequently happens that two or more diseases are combined together in one eruption. Thus it is very common to meet eczema and impetigo combined, when the disease is called *Eczema-Impetiginodes*. Favus occasionally causes considerable irritation, producing a pustular or impetiginous margin around it. The vesicles of scabies are often accompanied by the pustules of ecthyma, and so on.

In very chronic skin diseases, it may happen that it is impossible to say what the original disorder was, whether vesicular, pustular, scaly, or papular. In such cases the skin assumes a red colour, the dermis is thickened, the epidermis rough and indurated, and a morbid state is occasioned, in which all trace of the original disease is lost, and what remains is a condition common to various disorders.

As regards varieties, little need be said, and as formerly stated, I advise you to postpone their study until you are acquainted with the diseases themselves. Even then an acquaintance with them is of secondary importance. These varieties have been formed on account of the most varied circumstances, such as, 1st, DURATION, most of them may be *acute* or *chronic ;* 2d, OBSTINACY, hence the terms *fugax, inveterata, agrius,* &c. ; 3d, INTENSITY, hence the terms *mitis, maligna,* &c. ; 4th, SITUATION, hence the terms *capitis, facialis, labialis, palmaris,* &c. ; 5th, FORM, hence the terms *circinatus, scutulata, iris, gyrata, larvalis, figurata, tuberosa, guttata,* &c. ; 6th, CONSTITUTION, hence the terms *cachectica, scorbutica, syphilitica,* &c. ; 7th, AGE, hence the terms *infantilis, senilis,* &c. ; 8th, COLOUR, hence the terms *album, nigrum, rubrum, versicolor,* &c. ; 9th, DENSITY, hence the terms *sparsa, diffusa, concentricus,* &c. ; 10th, FEEL, hence the terms *læve, indurata ;* 11th, SENSATION PRODUCED, hence the terms *formicans, pruritus, urticans,* &c.; 12th, GEOGRAPHICAL DISTRIBUTION, hence the terms, *tropicus, Ægyptiana, Norwegiana,* &c.

Notwithstanding I have endeavoured to place this subject before you in as simple and uncomplicated a form as possible, I am conscious that at first you will still experience considerable difficulty in the diagnosis of skin affections. This can only be removed by practical experience at the bed-side, and by constantly exercising your powers of observation in detecting the essential elements which their varied forms present. At the same time, I think the modified classification and short characters I have given, will materially assist your studies in this important department of practical medicine. It must be remembered, however, that they only refer to those cutaneous diseases which you are liable to meet with in this country. Should you ever be called upon to practise in the tropics, or in other places where peculiar skin disorders prevail, it will, of course, be your duty to study them in an especial manner. Here, as they cannot be made the subject of clinical observation, they are altogether removed from our consideration.

LECTURES ON GENERAL THERAPEUTICS.

By Douglas Maclagan, M.D., F.R.S.E.

(Continued from page 276.)

LECTURE II.—THERAPEUTICAL ACTION OF REMEDIES—ANTIPATHIA—ALLOPATHIA—HOMŒOPATHIA—SPECIFICS.

In the former lecture we were engaged in considering the physiological action of remedies, which we believe to be obtained, either from their being absorbed into the circulation, or from their making an impression on the nerves, or perhaps from their reaching distant organs, or parts of the system, through both of these channels. We have now to turn our attention to the further question, how do these physiological actions lead to the therapeutical effects, which are secondary to, and consequent upon, them ; in short, in what way do remedial agents cure diseases ?

It has long been admitted, that there are two ways in which an agent, affecting the system physiologically, may effect the cure of a disease. 1st, By the physiological action of the remedy being diametrically opposed to the morbid action going on in the system, and thus, by direct resistance, subduing and overcoming the disease. This is expressed by the old Hippocratic axiom of *contraria contrariis curantur* ; and is in modern technical language said to be the *Antipathic* cure of disease (*ἀντι* opposite to, *πάθος* disease). This is exemplified, for instance, by the use of an astringent, such as catechu, in diarrhœa ; the morbid process being unnatural amount of secretion from the mucous membrane of the bowels, the physiological action of the drug being to diminish secretion by the intestines, and the disease thus being directly opposed by the remedy. The same explanation applies to a purgative relieving constipation,—that is, a substance which excites the peristaltic motion and secretion of the bowels, remedying a disease which consists in deficiency of peristaltic motion and secretion ; or to opium allaying pain,—that is, a substance diminishing the sensibility of the nervous.system, relieving a symptom which consists in a preternatural exaltation of the sensibility of a nerve ; or to a stimulant, such as alcohol, removing the state of syncope,—that is, a substance which causes increased action of the heart and arteries, obviating a condition which depends upon these organs not propelling the blood towards the brain with sufficient energy.

In all the instances where a remedy can be said to act purely on the antipathic principle, it must be capable of exerting a physiological action on that organ or portion of the system in which the morbid action essentially resides. In a great majority of instances, however, we cannot accomplish the cure of disease so directly. It may not be easy for us to act physiologically in any way on the true seat of the disease, or, at least, we may not be able to procure a physiological action in it directly antagonistic to the morbid process existing there ; and hence we admit of another method by which disease may be cured.

2d, Then, Remedies may cure disease, by exciting in the body an action, in itself unnatural, the production of which is incompatible with the continuance of the disease which we seek to cure. We produce, as it were, an artificial disease, of a comparatively slight and manageable character, in one organ of the body, to remedy a disease of a more serious character existing elsewhere. This has been called the *Allopathic* cure of disease (*ἀλλος* different, *πάθος* disease). It is exemplified, for instance, in the application of a blister to the chest in the treatment of pleurisy,—that is, the production of a comparatively slight and manageable inflammation of the skin, to arrest the more serious disease of inflammation in the pleura ; or in the use of active purging in dropsy of the belly,—that is, the production of what we may call an artificial diarrhœa, to relieve the more serious distress arising from an accumulation of serum in the peritoneal cavity. In such cases we, in reality, only imitate nature, which we often observe to cure one disease by setting up another in some distant part of

the system. Such cures, when no important evacuation occurs, are said to be accomplished on the principle of counter-irritation. It is not necessary for our present purpose to consider the explanations which have been given of action by counter-irritation ; on this we shall have a few words to say when we come to consider those remedies which are specially employed as counter-irritants. In the meantime, we have to deal with the fact, which ample experience has established, that the existence of a morbid process in one part of the body frequently modifies or arrests a diseased action going on in another,—and of this we avail ourselves when we treat disease allopathically.

On a general review of the two methods of cure—the antipathic and allopathic—we may say that it is on the allopathic plan that we most commonly *cure* disease,—the remedies acting antipathically being in general of a more limited action, and being valuable rather from their enabling us to relieve some troublesome symptom, than from their radically curing a disease. There can be no doubt, however, that diseases may be not only relieved but cured antipathically, though they more commonly are cured allopathically.

Within the last sixty years, however, a third doctrine has been propounded, in explanation of the action of remedies in the cure of disease, which originated with the German physician Hahnemann, and which is well known under the name of the *Homœopathic* system. This, as its title implies (*ἱμαιος* alike, *παθος* disease), means that remedies cure diseases, neither by exciting a directly contrary action, nor a different and antagonising action, but that they in reality operate by producing an action similar, or at least analogous, to that of which the disease to be cured consists. It is expressed by the axiom *similia similibus curantur*. In order, however, to your receiving as truth, a doctrine so entirely subversive of all the principles upon which the art of healing has hitherto been practised, it is necessary that you should prepare your minds by a somewhat formidable operation. You must consent to admit, either that the recorded experience of all practitioners, previous to the time of Hahnemann, is worthless in point of fact, or that if physicians did cure diseases, they did so only when by accident they stumbled upon a homœopathic remedy. This is a sacrifice of opinion which I am not prepared to make. I cannot bring myself to believe, that when physicians, from the days of Hippocrates to the present time, have told us that they cured certain diseases, such as inflammations, by bleeding and purging, either that their practice had nothing to do with the cure, or that the bleeding and purging produced inflammation or something like it, and so cured the original malady. We are not entitled, however, to set aside any system of therapeutics, either because it is at variance with previously formed opinions, or because its theory does not appear to us to be good. If its facts be true, we ought to adopt them, even though theoretically they be distasteful to us, and wait patiently, till by more extended observation, we can discover their real explanation. Although, therefore, I do not intend to waste your time with a discussion of the details of homœopathy, I think it is right that you should know something of the leading doctrines of a system of such pretensions, that you may be able to form some opinion as to whether they are founded on facts or not. 1st, It is maintained that remedies which are known to cure certain diseases have the property of themselves producing a similar or analogous disease. Thus, it is said that cinchona cures intermittent fever, because it can produce on a healthy person symptoms resembling those of this disease. Now, what is the most characteristic feature of an intermittent? It is undoubtedly its periodicity, or tendency to recur at a certain hour ; the same is true of periodic headach or megrim. Is it a fact, then, that any healthy person taking cinchona, or quinine, or arsenic, or iron, all established anti-periodic remedies, ever had induced in him by their use a disease which recurred at a particular hour, or which showed anything analogous to periodicity in its appearance? I unhesitatingly answer, no. A prolonged use of quinine by a healthy man will produce a certain train of symptoms, but they have not the least analogy,

much less a resemblance, to a periodic disease. Yet this instance is one of those which have been especially quoted as examples of homœopathic action; nay, it is the very one by which Hahnemann was led to propound his system. The greater part of the instances which have been cited to show that medicines produce symptoms analogous to those of diseases which they have been observed to cure, are mere isolated occurrences, obviously only coincidences, and not entitled to be regarded as true consequences. It will not do to quote such examples, and found upon them a system of medicine. To make anything a medical fact it must be observed, not once or twice, but in a preponderating majority of instances, to follow the cause of which it is supposed to be the effect, and in no one example has a remedy of established power been observed *generally* to produce the disease, or anything analogous to the disease, which it is known to be capable of curing.

You will be curious to know how it is ascertained what are the symptoms which a remedy can produce, and, consequently, what are the diseases which it is to be able to cure. The process is very simple. A person swallows the drug to be experimented on, notes every sensation which may be experienced by him, calls these " symptoms," and ascribes them to the medicine under trial. If he feels inclined to scratch his nose, or if a pimple comes out on his forehead, or if the remains of his last meal make a little rumbling in his bowels, these are all to be noted as symptoms, and designated by the most portentous terms which a stretch of language can apply to them. This kind of investigation is somewhat facetiously called a *proving*, and the selection of the remedy for the disease is based upon the correspondence of the so-called symptoms produced by the medicine in healthy subjects, with the symptoms of the disease in the sick.

The doctrine that remedies act by inducing a state of the system analogous to that which is to be cured, may be said to be all that is essential to homœopathy as a theory of therapeutics. There are, however, two points of homœopathic practice to which I have to direct your attention. The first is the doses in which the medicines are given. The doctrine on this point is, that, as it is of importance to produce no more of the artificial or medicinal disease than is just enough to expel the natural malady, the smaller the doses are the better, and unpleasant secondary effects are thereby avoided. Hence the doses given are commonly portions of a grain, from the millionth to the decillionth part, the latter being a quantity, which, if expressed in figures, would require a larger range of cyphers than the black board behind me would hold in a straight line. I need not occupy your time with describing how these attenuations, or dilutions as they are called, are got, further than by saying that one grain of the medicine being rubbed up with a hundred of sugar of milk, one grain of this preparation,—that is, one hundredth of the original drug,—is a second time rubbed up with a hundred grains of sugar of milk; one grain of this is again treated in a similar manner; and this process is repeated till twenty or even thirty dilutions have been practised. The same thing is done with fluids or solutions of soluble matters, by agitating them with successive portions of water. They are then prepared for use by making them up with sugar of milk into the little globules which I here show you. Now, it is contrary to all common sense, to suppose that such inexpressibly small quantities of anything should be able to produce medicinal effects on the body; and it is still more difficult to believe this possible in the case of substances, such as charcoal, which, even in large quantities, have no appreciable action on the body whatever, and which constitute some of the most esteemed medicines of the homœopathists. Nor is it less contrary to direct experiment; for these globules, when swallowed by healthy people, produce no effect whatever. All this, however, we are told, is of no consequence. Though the quantities are such as all our previous notions would lead us to believe inert, we are informed that they become very potent from the agitation to which they are subjected during their preparation; and though they produce no visible effect on those unbe-

lieving people who have the boldness to swallow them for experiment, they are still potent as remedies, because the system, when diseased, has a strong predisposition to be acted on by the appropriate homœopathic medicine. I need hardly say that there is not a shadow of proof that either of these assertions is true. They are pure assumptions, to get rid of the simple and indisputable fact, that these infinitesimal doses have no action on the body whatever.

The second point in homœopathic practice which I have to mention is the peculiar strictness of the regimen to be followed by the patient. Not only must he give up indigestible articles of food, and tea, coffee, and beer—all of which is very intelligible, because we know that these may disagree with the stomach, and so prove injurious, but he must even avoid such trifling matters as the smelling of a perfume, or using an aromatic tooth-powder, because these may interfere with the action of the remedies he is using. I confess that I have never been able to understand why, when a medicine has acquired great potency by its being duly agitated in its preparation, and when it has been taken into a body predisposed to its action, it should be so easily rendered inert, by agencies which we know to have no particular activity in themselves, and to whose action the system is not predisposed in any way.

I think that you will have no difficulty in deciding as to what is the real truth in all this. If you were at all convinced by what I taught you in the first part of this course, that diet and regimen are not only important but most efficient means for the cure of disease, you will not hesitate to regard the hygienic treatment as the real agent in homœopathic practice, and will set aside the globules as having nothing whatever to do with the cure of disease.

Nor must we leave out of view the effects of mental impressions, and of the very prevalent readiness to believe in the efficacy of everything that is peculiar, and, above all, that is new, as tending to produce some effect on the sick. Nothing that has been recorded in favour of homœopathy is a bit more apparently entitled to credit than has been adduced in support of metallic tractors, animal magnetism, and other quackeries, which could operate in no way than by strongly impressing the minds of those who were subjected to them. So far as I can observe, or gather from homœopathic books, those who have been, or who have supposed themselves to be, benefited by this mode of treatment, have either been the subjects of slight attacks of acute disease, requiring no medicine at all, which every practitioner meets with daily, or of chronic maladies which yield to time, patience, and regimen; or they have been nervous fanciful people, who only need for their cure to be kept from taking active medicine when they do not require it.

I have not thought it right to argue the question at length. I ought, perhaps, not to have occupied your time with it at all; for, in truth, pure homœopathy is rapidly getting out of fashion, and will, ere long, be sufficiently accommodated in a quiet nook in the history of medicine. It no longer stands on the ground, as a fundamental system of cure, which it originally pretended to occupy. It is rarely practised in its original purity. It is, no doubt, adhered to in those forms of chronic and slighter acute diseases, for the cure of which hygienic means are sufficient; but in severe acute diseases, where the powers of medicine are most fairly put to the test, it is either deserted, generally by the patient, not unfrequently by the doctor, for established allopathic remedies, or, if persisted in, proves anything but satisfactory.

Let us, however, give homœopathy its due. It has done good in one respect— it has shown us more distinctly how much may be accomplished by Nature in throwing off disease, if she be assisted by hygienic means; and it has helped to lessen the love for administering and swallowing huge quantities of medicine in cases where it is not required.

Before leaving the subject of the therapeutical action of remedies generally, let me mention an expression which you will frequently meet with in books, and which I may perhaps use in some subsequent lecture, the meaning of which you ought to understand. This is the phrase, that such and such a

remedy has been used as a specific for such and such a disease. By the earlier writers on medicine, who did not take physiological actions into account—for the simple reason that they knew nothing about them—a specific was understood to be a substance which had an absolute power of controlling certain symptoms of disease, and which would do this always and certainly. The phrase is not now used under such a definition, because experience has amply shown that there is no remedy which will always prove efficacious. The word specific has, however, in modern times been understood to signify a substance which is known to cure disease—*i. e.*, to act therapeutically, without our being able to refer its therapeutic effect to any physiological action. Thus sulphur has been said to be a specific for itch, colchicum for gout, cinchona for agues, and mercury for syphilis; because these remedies have been found, by experience, to be specially adapted for the cure of these diseases, and no physiological action has been traced by which their good effects can be supposed to have been produced. But it is not at all probable that any such thing as a true specific really exists. To say that the action of a remedy is specific, is only an unsatisfactory way of shirking the confession, that we have yet much to learn as to the *modus operandi* of remedies. We are yet ignorant of many most important points in physiology, of still more in pathology, and where this is the case we in vain attempt to give a rational explanation of the action of remedies. How can we expect, for instance, satisfactorily to explain the antiperiodic action of cinchona or arsenic, when we do not know anything of the cause of that remarkable phenomenon of certain diseases which we call intermittence? It does not bring us a bit nearer the truth to say that its action is specific—we still ask, but in vain, why is it so? The number of so-called specifics is now very small, and we may reasonably hope, as the science of physiology makes progress, that their action will be accounted for in a satisfactory manner. It is doubtful, even with our present comparative ignorance, whether it is a fact with regard to the most of them, that we do not trace some physiological action with which their therapeutic powers may with some probability be connected. The term specific is, however, often employed in a semi-popular sense, without any special theory being connected with its use. Thus we often hear a medicine spoken of as being "quite a specific,"—the meaning of this being, not that it is a substance whose action cannot be explained, but merely that it is a remedy in most instances of very efficacious nature. It is not a correct mode of expression; but in this limited sense it is, at least, so far harmless that it does not involve a false theory.

Classification of Remedies.—In sketching out the plan of the course in my introductory lecture, I told you that when I came to consider individual medicinal substances I should adopt a natural history arrangement, and divide them into mineral, vegetable, animal, and imponderable remedies. I follow this order as a matter of convenience; for it is not defensible upon any other ground. There can be no doubt that the most philosophical plan would be to consider individual remedies under an arrangement founded on their therapeutical actions. But our knowledge of general therapeutics, and more particularly of the actions of many individual medicines, is not yet sufficiently correct to enable us to do this in a course of lectures. It would lead to a forced, and in many instances confused, method of describing the articles of the materia medica, and would entail upon us the necessity for not a little repetition, and consequent loss of time.

Before, however, we can proceed to describe individual substances, and their applications to the cure of diseases—before I can tell you this substance is a tonic, this an emetic, and this a cathartic, it is necessary for me to give you some idea of the meaning which is attached to these terms.

For the purpose of obtaining this preliminary knowledge, we must arrange remedies in certain groups, founded upon their supposed *modus operandi*, and thus, as it were, adopt some standard to which we may be able to refer, in describing the actions of individual substances. There are two distinct prin-

ciples upon which we might form these groups, and construct a classification of remedies—we may view them either in relation to their physiological action or according to their therapeutical effects.

If we adopted the latter, we should form such groups as febrifuges, or remedies which remove fever; antiphlogistics, or remedies which cure inflammation; antispasmodics, or remedies which relieve spasm. If we take physiological action as our basis, we shall form such groups as diaphoretics, or medicines which cause sweating ; cathartics, or medicines which cause purging ; narcotics, or medicines which diminish the sensibility of the nervous system. Now, we should find at once that the therapeutic classification would never answer our purpose—viz., that of setting before us a view of the *modus operandi* of remedies—firstly, because therapeutic actions are not, like physiological actions, constant, but vary with the varying phenomena of disease to which they stand related ; and secondly, because remedies of the same therapeutic class—i. e., which ultimately produce the same curative effect—do so in very different ways, and bear no resemblance to each other in their *modus operandi*. Let us take antispasmodics as an example. Traumatic tetanus and hysteria may be taken as two instances of spasmodic disease, requiring for their cure antispasmodic remedies. For the one, we should have recourse to opium ; for the other, to valerian. Now, no two substances can be more dissimilar in their several properties than opium and valerian, or less entitled to stand side by side in any arrangement,—yet we must put them both among antispasmodics. In doing so, we are so far right ; because we have the knowledge of the two facts that opium may be of use in tetanus, and valerian in hysteria ; but, so far as the classification helps us, we do not see any good reason why it should not be the reverse, and valerian be the remedy for tetanus and opium for hysteria. When we leave the mere therapeutic effect, and go back to inquire into their physiological action, the matter is explained to us. Opium diminishes the sensibility of the nervous system, valerian rouses and stimulates the nervous system. Tetanus arises, in some way or other, from an irritation caused by an injury of a part copiously supplied with nerves ; hysteria is connected, in some way or other, with a want of power in the nervous system. In one case we wish to render the injured nerves insensible to that irritation, and we have recourse to our narcotic as the most likely means of accomplishing this ; in the other, we wish to restore power to the nervous system, and we have recourse to our nervo-stimulant for the purpose. In both cases the antispasmodic therapeutic effect is—or perhaps, with tetanus as an example, I should say, may be—produced ; but it is by viewing our two remedies, not as antispasmodics, but as a narcotic and a nervo-stimulant respectively, that we learn why it is that they were applicable to the cases in question.

I have not offered these remarks on the principles of classification of remedies for the mere purpose of justifying the preference for a physiological arrangement, for that is a matter which is not much in dispute. But I am anxious, before we go any further in the study of materia medica, to impress upon you the importance of your endeavouring, so far as the progress of science will enable you, to form some idea as to the course of action which a medicine follows when it is given for the cure of disease. Unfortunately, we are yet too ignorant to be able always to do this, but by all means let us try to do so when we can. Do not, in prescribing, select this particular remedy merely because Dr So-and-so has taught you that it is efficacious against that particular disease. Make use of this information by all means, because you must be guided by the experience of others till you have accumulated experience for yourselves, but do not rest content with it. Endeavour, if you can, to acquire some knowledge of the course which it is likely to follow in bringing about the cure of the disease ; and, at all events, when you first enter into practice, try to trace it through its physiological to its therapeutical action. You may not succeed in your attempt, but you will not be the worse for having tried to do so and failed ; and if you should succeed, you will have gained an important advan-

tage. For should any unexpected circumstance occur which precludes the use of the established remedy, you may be able to find, in some other one of kindred physiological action, a means of attaining, though by a slightly different route, the same therapeutic result. Moreover, you will, by such an exercise, be likely to obtain some increase of knowledge in another direction. You can hardly resolve in your minds the probable connection between the physiological action of a remedy, and the cure of a disease by it, without giving careful consideration to the pathology of the disease itself, and so you may be led to a more correct view of its nature, and may thus be able to form a better opinion as to its probable course. Do not suppose that I wish you to form theories, and then to try in your practice how they will work. First observe for yourselves, or make use of the observations that others have made for you beforehand, and then apply your theory to explain to you what has been observed ; but beware of making theories first and then seeking for observations to support them. This is not the rational medicine of which so many people are in search—it is rash and unjustifiable experiment. Let me quote a very commonplace example in support of my exhortation to you, to reflect on the *modus operandi* of your remedies. You are called to a case of poisoning by opium, and an emetic is wanted. You have at your command tartarised antimony, ipecacuan, and sulphate of zinc. You have been taught by your instructors that the latter has been found to be the best in such a case. Use it then upon the faith of this experience, at once and without delay ; clear your patient's stomach of the poison, and save him from its effects. This is the first time that such a case has occurred to you. You have obtained the practical result which you were led to expect, and so far you have every reason to be satisfied. But put to yourselves the question, Why was sulphate of zinc the best ? Is it merely more powerful than either of the others ? Or is it more safe ? Not so. It is not in some respects so powerful as tartar-emetic; it is not so safe, in some respects, as ipecacuan,—Why then is it preferred to them ? It operates with more rapidity, and it acts with less nausea ; there is, therefore, a two-fold reason why there is less chance of the poison being absorbed, and more probability of your patient escaping its effects, than if you had employed either the more slowly acting ipecacuan, or the more nauseating tartar-emetic. When the next case of narcotic poisoning occurs, and the sulphate of zinc cannot be had, you will succeed best if you endeavour, by such means as are at your command, to imitate its *modus operandi* as closely as possible,—that is, to evacuate the stomach rapidly, and with little production of nausea.

Part Fourth.

MORBID ANATOMY AND PATHOLOGY.

PATHOLOGY AND PHYSIOLOGY ONE SCIENCE.

The tendency of modern inquiry has unquestionably been to show that almost every diseased action is but a perversion, by *excess*, by *diminution*, or by *depravation*, of some normal function ; and, consequently, that only through an acquaintance with the latter can the former be rightly understood, either as to its cause, its nature, or its tendencies. The body in health, and the body in disease, is the *same* body ; and whilst our knowledge of the phenomena of disease can only be based, like our acquaintance with the phenomena of healthy action, on direct observation, our power of *interpretation* of those phenomena must depend mainly upon the extent of our acquaintance with the laws of

physiology. The two sciences, in an enlarged view, are in fact one ; and in cultivating either separately, we are continually trenching upon the borders of the other, much more than we may be at first aware. Thus every *experiment* made by the physiologist is really the induction of an abnormal or *pathological* condition, from which, as also from the phenomena of natural disease, he is enabled to deduce inferences which the most persevering observation of normal action would never have revealed to him. And so, in the observation of disease, we cannot ascertain what really *are* its phenomena, until we are acquainted with the normal actions of which they are perversions ; nor can we make the least approach to anything more than an empirical association of these phenomena, unless we are acquainted with the mode in which the healthy actions of the organs which manifest them are linked together. We think that a careful consideration of the history and present state of pathology will show that its advance towards the character of a science has taken place *pari passu* with that of physiology ; and that those departments of it are at present best understood, in which physiology is most advanced. Hence we look with no favourable eye upon any attempt to lower the value of physiology in the estimation of medical students. Although an instance may here and there present itself, in which an undue amount of time and attention are given to this portion of the curriculum, yet we believe that the experience of most physiological teachers will accord with our own observation,—that the medical students, as a body, have a strong preference for that which they regard as "practical," and no particular fondness for the "scientific ;" and thus that there is rather a danger of physiological study being neglected, than of its being held in too high an estimation.—*British and Foreign Medical Review,* January 1850.

ON FATTY DEGENERATION OF THE SMALL BLOOD-VESSELS OF THE BRAIN, AND ITS RELATION TO APOPLEXY. BY JAMES PAGET.

The granules and masses, which may so frequently be observed by the histologist, in connection with the vessels of the brain, are considered by Mr Paget to exist beneath their outer surface, and not external to them, as stated by Dr Hughes Bennett. He says that an examination, with well adjusted light, will always find the outer layer of the wall as a distinct dark line, raised up and continued over the surface of the cluster of oil-particles, or lost on its most prominent part. Hence Mr Paget considers the appearances figured by Dr Bennett and others, not as the product of inflammation, but as a fatty degeneration of the vessels themselves ; and regards this change as the ordinary precursor, or even the immediate predisposing cause of apoplexy.—*London Medical Gazette, Feb.* 8, 1850.

[Since reading the above paper of Mr Paget, we have taken some pains to ascertain the correctness of the facts he describes, and have examined more than one specimen of cerebral structure, in which the vessels were affected. As regards the larger blood-vessels, there can be no doubt that they are liable to undergo fatty degeneration of their coats, as has been long recognised by morbid anatomists ; and there can be little doubt, that such as are of very small calibre, but in which more than one layer exists, may undergo the alterations so well described and figured by Mr Paget. With regard to the capillaries, however, the granules appear to us to be always outside. We have examined them with Ross's instrument, and with the best light, and believe that the distinct dark line alluded to by Mr Paget is owing to the granules, seen under such circumstances, not being situated exactly at the edge of the capillary, so that, at certain points, the wall of the latter has the appearance of passing over the granules. But, whenever one or more granules are seated exactly at the side of these vessels, the irregular margin externally, and the continuous line below them, prove that they are outside. Besides, it may frequently be observed, that where the capillaries or small vessels branch, a collection of these granules takes place at the fork between them, most distinctly external to the vascular wall.

We have been long of opinion, that the peculiar attraction which consti-
tutes softening of nervous texture, is a fatty degeneration ; but we also think
that this originates in an exudation, poured out from the vessels. We do not
deny, that the coats of such vessels, especially of the larger ones, may become
loaded with oil-granules, but consider it very improbable, that such as are so
formed should ever constitute those large collections, masses, and granular cells,
which are produced in well marked cases of cerebral and spinal softening.]

ON CANCER AND HYPERTROPHY OF THE COATS OF THE STOMACH, ANATOMICALLY
AND CLINICALLY CONSIDERED.   BY DR CARL BRUCH OF HEIDELBERG.

Dr Bruch's memoir on the above subject occupies an entire number of Henle
and Pfeufer's Journal.   Numerous cases are recorded, in which the symptoms
during life, and an examination of the morbid structures after death, are care-
fully detailed.   The author has also analysed most of the trustworthy cases
that could be collected, and from the whole inquiry deduces the following con-
clusions, the translation of which we copy from the " Medical Times."   The
memoir itself must be considered as a valuable consideration to the special
pathology of cancer.
1. Hypertrophy, or the increase of the normal substance of an organ, with
retention of its texture and figure, appears in the stomach as a gradual, and
more or less uniform, swelling of the gastric membranes.   Cancer, which is
always a true after-growth or new structure, takes, with few exceptions, the
form of a swelling, and appears as a circumscribed, prominent, often knobbed
or tuberculated after-growth, which destroys the normal structure of the
tissues.
2. Hypertrophy, even where it is the result of a cancerous construction, is
characterised by a *gradual* swelling of the membranes, having the proportion
of their natural increase of thickness towards the pylorus ; while, on the other
hand, cancer may be situated in any possible part of the stomach, and always
exhibits a partial degeneration of the membranes.
3. In hypertrophy, often only one membrane (viz. the muscular) suffers, and
in its whole extent.   In cancer, on the contrary, very often several membranes
become transformed into one common after-growth.
4. Even where many membranes are hypertrophied, they are always seen as
particular layers lying over each other ; while in cancer, sometimes one, some-
times all, are irrecognisable.
5. The division of the muscular coat into compartments is not characteristic
of cancer.   On the contrary, even where it occurs in true cancer, it only signifies
hypertrophy of the muscular tunic.
6. In hypertrophy the coats are, at first, in spite of their thickening, separable
from each other ; in cancer they are fused in the after-growth.
7. In general and pure hypertrophy, the stomach is always narrowed and
hardened.   In cancer, especially of the pylorus, there is usually considerable
dilatation and thinning.
8. Hypertrophy may precede the cancerous new growth, and occurs as a
partial hypertrophy of the neighbourhood simultaneously with the cancer, or it
is associated with cancer of the pylorus, as a secondary event, when constriction
appears.   In the latter case the (general ?) dilatation remains.
9. Chronic gastritis occurs as well in hypertrophy as in cancer ; but it would
appear that, in the first, it is more as a cause ; in the last, as an effect.
10. In hypertrophy a large portion, or the whole of the mucous membrane,
is more frequently diseased ; while in cancer, a great extent is commonly still
normal.
11. The diagnosis during life is trustworthy only in those instances where
appearances of constriction are present ; since, in other instances, hypertro-
phy is scarcely accompanied by any other symptoms than those of chronic
gastritis.
12. A sensible knobbed swelling, especially when sharply defined, or many

knots of a tumour in the epigastrium, speak decisively for an after-growth of the pylorus, and against a pure hypertrophy ; while, on the contrary, a diffuse resistance and swelling of the epigastrium speak for the latter condition, especially when the hard part corresponds to the form of the pyloric portion of the stomach. (That the swelling is impalpable, does not definitely exclude cancer.)

13. Displacement of the stomach, with sensible hardness, speaks for the great probability of an after-growth.

14. A limited and permanent sonorous sound on percussion speaks for general hypertrophy (narrowed and hardened walls), a diffused and inconstant sonorousness for cancer (dilated and thinned walls).

15. Vomiting at definite periods, especially many hours after eating, speaks very certainly for cancerous constriction. (Dilatation of the stomach without gastritis.) Continuous vomiting in the fasting state, or immediately after each ingestion, rather for hypertrophy (*i. e.*, for narrowing of the stomach, and for chronic gastritis,—which latter certainly becomes augmented in the last stages of cancer.)

16. The quality of the matter vomited, depends not so much on the form of disease, as on the condition of the gastric mucous membrane. Black (or " coffee-grounds ") vomitings signify nothing but effusion of blood in the stomachal cavity.

17. In the case of a cancerous softening and destruction of the mucous membrane, in which elementary parts of the after-growth may be evacuated, the microscopic examination of the vomited matters must not be omitted.

18. A long duration of the disease, and an unbroken progressive development, speaks for hypertrophy. Cancer generally runs its course in from one to two years.

19. A sudden intermission of the vomiting, and of the other appearances of constriction, with subsequent return, accompanied by a sensible swelling, is one of the surest indications of cancer (commenced softening.)

20. The absence of appetite is more frequent in hypertrophy (diffuse disease of the mucous membrane) ; good appetite is more usual in cancer (partial disease.)

21. Pain refers either to the mechanical inconvenience of the after-growth, or to chronic gastritis. It is therefore not characteristic.

22. The constitutional effect depends on the narrowing, the chronic gastritis, or the suppuration ; and on the secondary events of emaciation, pain, obstruction, &c. It is therefore altogether of relative import.

23. With respect to ætiology, continual mechanical injuries (local influences, as in shoemakers, weavers, &c.), appear more to dispose to cancer. While spirit-drinking, gluttony, and nervous conditions (especially morbid and continuous nervous vomiting), seem to conduce to hypertrophies. Acute and chronic inflammation appear of equal efficiency for both.

24. The existence of an isolated swelling once established, the diagnosis of cancer from other after-growths is scarcely of much practical interest. But lipoma, fibroid, or alveolar gelatinous tumours, or the benignant tumours generally, are indicated by the mildness of their phenomena and the more frequent absence of constriction. Besides, they do not soften, and hence they lack those symptoms which depend on this change. Disseminated deposits in other organs, namely, in the liver, together with the existence of a circumscribed swelling in the stomach, of course affirm cancer.—*Zeitschrift für Rationelle Medizin, Band VIII. Heft. 3.*

CASE OF CANCEROUS DISEASE OF THE SPINAL CORD.

Professor Lee, of Geneva College, describes the case of a gentleman, aged 45, who, at his first visit, he believed to labour under some obscure form of disease, involving the spinal cord. He was a thin emaciated

man, of strongly marked nervous temperament. There was great functional derangement of all the organs, especially of the kidneys and liver ; the urine being ammoniacal, and loaded with phosphates, while immense quantities of fine biliary calculous matter, chiefly cholesterine, passed from the bowels, with almost every evacuation. " He moved about with great difficulty ; complained of constant pain in the back and loins ; and at times severe neuralgic pains would attack the muscles of the trunk and extremities, or some of the large internal organs." These symptoms, at first, led to the suspicion of the existence of renal calculus. There was considerable tenderness, on pressure, over the lower dorsal and the lumbar vertebræ. Five or six months before his death, the patient lost completely the power of moving the lower limbs ; sensation remained unimpaired, and his sufferings were at times frightful. He sunk from gradual exhaustion.

Autopsy.—Body much emaciated. Thoracic, and large abdominal viscera perfectly healthy. Kidneys small, but, like the liver, normal in texture. " The chief disease was found seated in the lumbar portion of the spinal cord, opposite the last dorsal and two upper lumbar vertebræ ; at this part, for a distance of several inches, the *membranes of the cord were found wanting,* and a carcinomatous degeneration of the substance of the cord had taken place, disorganising its texture, upon its anterior face especially, and more or less throughout its whole diameter. The spinal marrow, for a space of two or three inches, was changed in colour and density ; some portions being softened and almost diffluent ; and interspersed throughout were deposits of *melanotic* matter, while other parts were of abnormal hardness, and of a dirty white or yellowish hue, intersected with blood-vessels crossing in different directions. The pressure of the cancerous tumour on the spinal column had caused the absorption of a portion, probably two-thirds, of the bodies of the two upper lumbar vertebræ ; and these cavities, varying from one to two inches in depth, were filled with portions of the diseased mass. The diseased portions filled up the cancellated texture of the bones, and were separated with great difficulty, being in some parts soft and semi-fluid."—*New York Journal of Medicine,* September 1849.

[Dr Lee, after alluding to the extreme rarity of cancerous disease of the spinal cord, refers to all the cases of the kind on record ; and those who feel interested in the subject will find a tolerably comprehensive bibliography appended to his memoir (p. 157). Some of the reputed cases of spinal cancer have, undoubtedly, originated in the bones themselves ; others, there is reason to suspect, have not been of a cancerous nature at all, but rather deposits of tubercle. From the description of the autopsy given by Dr Lee, and from our inspection of the very well executed coloured drawing, which accompanies his essay, we feel assured, that his patient's case was actually one in which cancer originated in the substance of the cord itself, or more probably sprung from its investing membranes. We regret that no microscopic examination of the tumour was made.]

MEDICINE.

GOUT AND RHEUMATISM.

At the Westminster Medical Society, on the 23d February, Dr Garrod read an essay on the connection between gout and rheumatism, of which the " Medical Times " gives the following abstract :—

" Many physicians consider gout and rheumatism as diseases so closely allied as to be merely varieties of the same ; others, as differing essentially from each other ; while a third set believe that, although well marked attacks of acute gout differ widely from those of acute rheumatism, yet that the two diseases may, as it were, imperceptibly merge into each other, or that in a given case it may be impossible to diagnose between them. The object of this paper was

to ascertain which of these different views was correct. Dr Garrod first pointed out the differential diagnosis. Gout is a disease of advanced age ; rheumatism of youth. Gout is more common among men ; rheumatism affects both sexes alike. Gout, at first at least, attacks the plethoric, and those who live high ; rheumatism generally the debilitated from any causes. Gout is frequently hereditary ; rheumatism, if at all so, incomparably less so than gout. The exciting causes also differ. Gout is induced by high living, by certain indigestible food, or by local injury, in those strongly predisposed ; cold is the principal exciting cause of rheumatism. The rich are more subject to gout ; the poor to rheumatism. Gout frequently presents premonitory symptoms, affecting the digestive organs, which is not the case in rheumatism. Gout attacks the small joints; rheumatism the larger. In gout, one joint, generally, only is affected ; in rheumatism, many. In gout of long standing the large joints may be attacked, and also more than one ; sometimes again, in rheumatism, the smaller joints are involved. In both diseases the affection of the joints is accompanied by pain, redness, and swelling ; but in gout, the pain is generally more severe, and the redness and swelling greater than in rheumatism. In gout, we have œdema and subsequent desquamation, which do not occur in rheumatism. The fever in gout is proportioned to the local inflammation ; but it greatly exceeds it in rheumatism, and there is frequently profuse sweating after an acid character. Metastasis rarely occurs in acute gout ; and, when it does, the brain or stomach suffers, the heart seldom or never ; in rheumatism the heart is frequently inflamed, and the secondary affection becomes the most important. Chronic rheumatism is more frequent than chronic gout ; the latter is frequently accompanied by the secretion of a milky fluid, which constitutes chalk-stones or tophaceous deposits. Their composition is peculiar, consisting almost entirely of urate of soda, and sometimes phosphate and carbonate of lime. In the fluid state, the needle-like crystals of the urate of soda can be readily detected under the microscope. They are met with on the joints of the hands and feet, which they distort and even dislocate, also in and around the sheaths of tendons, and even in the cancellated structure of the heads of the bones. (Specimens, one weighing 2 oz. when fresh, were exhibited.) Colchicum possesses an almost magic power in relieving the pain in gout, but is not attended with such marked benefit in the acute form of rheumatism.

" There is, however, a class of cases, in which even with the utmost care, the diagnosis cannot always be made. These are called rheumatic gout, and it would seem either that the patient suffered from both diseases at once, or that the two merged into one. Dr Garrod considers it a matter of great interest to ascertain the true nature of these cases, and to find out whether or not cases of true gout and those of rheumatism may not present similar, and almost identical symptoms, and yet in their real nature be quite distinct. In a paper read before the Medico-Chirurgical Society, Dr Garrod proved the existence of uric acid in the blood ; in the healthy fluid traces of it only could be found, but in pure gout it was greatly increased, so that from 1000 grains of serum it could be crystallized and weighed. It could also be procured in the form of urate of soda. This is not the case in acute rheumatism, as in that disease no more uric acid is found than in the healthy fluid. This, then, forms a marked difference between the two diseases. Uric acid, in Dr Garrod's experiments, was abundant in the blood in cases presenting symptoms of true gout; deficient in those of well-marked rheumatism. This he used lately as the test of the two diseases. A labourer being admitted into the hospital with a complaint in one hand, which had been previously treated as rheumatism, but presenting characters of gout, as Dr Garrod supposed, he directed a small quantity of blood to be drawn, and discovered uric acid abundantly in it. The man afterwards said he had had a similar attack in the toes, and that he could at any time bring on an attack by drinking beer freely. The plan for detecting uric acid in the blood, detailed in the paper read before the Medico-Chirurgical Society, being very difficult, Dr Garrod recommends the following as being more

simple:—He takes a small quantity of blood, say from half an ounce to one ounce, in a wide tube or small glass, and allows it to remain for some hours to separate into clot and serum. The serum is then decanted, and ʒss. to ʒj. put on a watch glass, then acidulated with 5 minims of acetic acid, and a fibre of hemp from a piece of linen or tow introduced. In about forty-eight hours, when the serum has become solid from evaporation, if uric acid be present, the fibre will be covered with its crystals in the form of rhombs; an idea of the amount of uric acid present may be obtained from the number of crystals. (A drawing of the fibre covered with the crystals was exhibited.) That these crystals are uric acid can be proved by adding a little water, when, by care, the fibre can be removed with a small pair of forceps, with the crystals ad- hering to it. Nitric acid and ammonia will at once determine their nature, by the production of murexide or purpurate of ammonia. Dr Garrod then mentioned, as an indication of gout, the presence of chalk deposits in the ear, a sign he has often observed. Sir C. Scudamore gives the tophaceous deposits, as being only 10 per cent.; but Dr Garrod has met with them in the ear much more frequently, so much so, as in the chronic cases to form a valuable sign of diagnosis. He has himself often diagnosed the disease from this mark alone, and found his opinion confirmed afterwards by the discovery of uric acid in the blood. In many chronic cases of gout, the condition of the urine will aid the diagnosis, as when there are tophaceous deposits, the kidneys appear to have lost their power of excreting uric acid, so that the urine is at all times free from lithic deposits. When the chalk stones are forming very freely, he has often found that not 1-100th of a grain of uric acid was eliminated in the urine in the twenty-four hours. At the same time the urine may present an acid reaction."—*Medical Times*, March 16.

<center>TREATMENT OF CHOLERA IN INDIA.</center>

Dr Musgrove of Bombay, recommends the following practice, which he has found very efficacious, both during the epidemic of 1832, in this country, and more recently in India. In the early or premonitory stage of the disease, he gives moderate doses of laudanum, combined with stimulants and aromatics. If collapse supervenes, the use of opium is abandoned, and the patient is en- couraged to drink plentifully of cold water, fresh draughts being given at short intervals, and repeated after each fit of vomiting. Frictions and the application of heat to the surface, are at the same time diligently employed. When the irritability of stomach begins to abate, a scruple of calomel is ad- ministered, and ten-grain doses afterwards given every half hour, till four have been swallowed. Of one hundred and fifty cases treated on this plan, Dr M. states, that *one* only proved fatal; and he adduces testimony from officers in the Honourable Company's service, and from native practitioners, who have pursued the same mode of treatment, with like success. (See Madras *Overland Athenæum*, October 13, 1849).

[In our own experience, the liberal use of cold water has often appeared use- ful. Indeed, the constant craving for water is a prominent feature in the dis- ease, and the quantity of fluid which some patients swallow is quite enormous. There is much reason to think, that were water received into the circulation "per vias naturales," the cold stage of the disease would give place to reaction. The published analyses of the blood,—the effect of injections thrown into the veins,—the rapidity with which reaction is sometimes induced by packing the patient in a wet sheet,—the reputed efficacy of the saline treatment, in which *water* is of course the vehicle; all tend to show, that a deficiency of the fluid element of the blood results from the profuse evacuations, and that until water is again received into the circulation, a cure cannot take place. Unfortunately it is not in our power to insure the *absorption* of the fluids poured into the stomach of a patient in the collapsed condition, and we have seen very many patients die, who swallowed gallons of water, and were treated upon the very plan advocated by Dr Musgrove. We do not mean to dispute the expediency

of the practice, which, on the contrary, we are inclined to commend, as founded upon a sound pathology ; but it is our duty to state, that, in the disease as it appeared in Edinburgh, both in 1832 and in 1848-9, a full half of true cholera cases went on to a fatal termination, in spite of the use of water in the mode recommended.

In certain seasons, and in certain epidemics, Indian cholera may yield to treatment more readily than in others, just as is observed in the epidemics of fever and of scarlatina, with which we in this country are more familiar. To this more manageable character of the disease, we feel constrained to attribute the astonishing success obtained by Dr Musgrove at Bombay.

Carbonate of soda has, in the practice of Dr Maxwell, and of other sur-geons in the Madras Presidency, seemed a most useful remedy. We have seen a letter from Dr A. Scott, written from Bellary, where cholera was raging extensively ; in which he attributes the very trifling mortality which had oc-curred to him in the course of a tolerably extensive practice, mainly to the use of the carbonate. Although we have never been able to see the precise indica-tions for the employment either of this salt or of the chlorate of potass, recom-mended by Dr Stevens, the success obtained in India by the use of the former is so well attested, that we conceive the remedy ought to be tried in this coun-try. It may, however, be found, that the vehicle, the water, is in truth of more use than the salt, and that the British epidemics may resist its curative influence.]

<center>IDIOSYNCRATIC ASTHMA.</center>

Dr Itzingsohn of Neudamm describes several cases of this affection in the Pr. Ver. Ztg. 30, 1849. His first patient was a healthy shopkeeper forty years of age, who, as often as he had occasion to handle freshly-ground coffee, was im-mediately seized with oppression at the chest, accompanied with sense of con-striction extending to the throat, and soon followed by loud râles heard over the whole breast,—short painful cough, and scanty tough expectoration. These symptoms were never observed to follow the more ordinary exciting causes of asthma,—such as exposure to cold, surfeit, mental excitement, &c.— they were uniformly remarked after the inhalation of coffee-powder. The du-ration of each attack varied from one to twenty-four hours, and was consider-ably modified by treatment. Bloodletting, sinapisms, &c., had been used by different physicians without benefit. Itzingsohn found the exhibition of re-medies calculated to stimulate the secreting functions of the liver more effica-cious ; and usually prescribed an emetic, full doses of Tart. Antimonii and Pil. Assafœt.

A second case occurred in the person of a dyer, sixteen years of age, and was attributed to his working in quercitron wood.

A third patient, a gardener, suffered repeated attacks from inhaling lamp-black (lampenblaken).

Itzingsohn mentions a fourth patient, a druggist, in whom the paroxysm was always excited when he was exposed to the dust of Ipecacuan, and in whose case the inhalation of æther, draughts of warm milk, and cold footbaths, were found to be the most effectual means of relief. He considers, that as in these cases there is a sudden stagnation of the blood in the hepatic circulation, causing accumulation in the heart and pulmonary artery, the indication to be fulfilled by treatment is to unload the liver as speedily as possible.—*Schmidt's* . *Jahrbüch.* 1849—No 11, p. 197.

[Most physicians must have met with instances of the production of asthmatic paroxysms by the inhalation of Ipecacuanha ; at all events its idiosyncratic action upon certain individuals is mentioned in many modern English works on medicine and materia medica. It is probable that there are other sub-stances capable of exerting a similar influence.]

SURGERY.

It appears, from the "Lancet," of the 2d curt., that Mr Fergusson has thought proper to notice, in an address to the students of King's College Hospital, the remarks upon an operation performed there, which we lately felt it our duty to offer. These remarks, it may be recollected, or seen by reference to page 183 of this Journal, for February last, were strictly limited to a comparison of the facts, as stated in the published report,[1] with the established principles of surgical practice. They did not profess to be written with any puffing, or, in London language, "friendly," view,—nor could they be charged with the slightest indication of hostility, except to the infraction, as it seemed to us, of sound practical rules. Every reader, therefore, who is sufficiently well acquainted with his profession to distinguish good from evil doctrine, may judge in how far our statements are well-founded or called for. But, instead of discussing the question at issue, upon grounds of legitimate inquiry, Mr Fergusson has endeavoured to give the affair a personal character. He is "at a loss to understand how the writer could have been annoyed at the proceedings recorded in the 'Lancet,'" and quotes many excellent moral maxims in recommendation of brotherly love. Then he asserts that "the individual who had thought proper to pass his remarks on his doings in this case was egregiously mistaken concerning its nature;" and that, "if the author were to pass in review the acts of private life, with as many misstatements and misrepresentations as he had introduced in his remarks upon this case, he would be the means of doing incalculable mischief." Finally, "he asked the pupils whether they gave him credit for knowing how to treat diseased bone and sinuses?" and anticipated their reply by telling them, that "the case, far from being open to criticism, is very creditable to surgery." Mr Fergusson may, perhaps, expect to withdraw attention from the comments which we felt constrained to offer, by engaging us in a personal altercation, but will not succeed in doing so, any more than in attempting to influence professional opinion, in regard to practical questions, by addresses to the feelings and prejudices of his pupils.

In accordance with the sense of duty imposed upon us, as explained in the Number of this Journal for February, we feel it necessary to notice the following case:—

DIVISION OF A STRICTURE AND LITHOTOMY PERFORMED IN IMMEDIATE SUCCESSION.

"The patient upon whom Mr Fergusson performed the next operation is about fifty years of age, and was admitted for a double affection—viz., a very narrow stricture, and stone in the bladder. This case presented somewhat more than usual interest, as it was understood that Mr Fergusson would proceed in such a manner as to combine two operations in one. The stricture was of a very irritable character, and gave the patient much pain; it had existed for eighteen years, and had during the last five months been the cause of extraordinary suffering. Mr Fergusson at first thought he had but stricture to contend with, until some time ago, when a small sound was introduced into the bladder, and the presence of a calculus ascertained. This discovery rather complicated the case, and the course which Mr Fergusson had thought of adopting—viz., dividing the stricture through the perinæum—had to be some-

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[1] Mr Fergusson said, that "he would with pleasure bear testimony to the accuracy of the report." But the report stated, that "numerous abscesses and sinuses had formed, and it would seem that a part of the sacrum was attacked, involving in the destructive process a portion of the rectum, about three or four inches from the natural orifice, and forming, between the ileum and sacrum, an artificial anus." It was to this statement that our remarks referred.

what altered. The first plan which suggested itself was to dilate the stricture gradually, then introduce a tolerable-sized staff, and operate for lithotomy ; but this would have stretched over a certain amount of time, and the patient was very pressing in his request to be operated on. Under these circumstances, Mr Fergusson resolved to comply with his wishes, and try to combine the two operations, so as to necessitate but one incision. When the calculus was being struck in the bladder, it was difficult to make out whether it was one of a large or small size, yet to make such distinctions seems, at first sight, to be a matter of no difficulty. Mr Fergusson, however, stated, that he was not able to ascertain the size of the stone ; and he added,—' People, with little experience, are very apt, after having sounded for a stone in the bladder, to state boldly that the calculus is either large or small; but those who have had much experience in these matters know how difficult it is to decide upon the size of the stone.' The patient having been brought under the influence of chloroform, and placed in the position for the operation of lithotomy, Mr Fergusson, after having passed a small grooved staff into the bladder, commenced his incision in the middle line, about two inches above the anus, and carried it downwards to within three-quarters of an inch of that orifice. This longitudinal cut was continued on the right side of the anus towards the ischium for an inch and a-half, or more ; and a second one, made on the left side of the anus from the angle of divergence, about the same distance downwards, towards the corresponding ischium—thus Λ. The perinæum over the bulb of the urethra presented an eminence resembling an abscess, such as is often met with in this locality as the result of stricture. The urethra was then sought with the straight bistoury, and this step proved rather difficult, as the staff was of necessity very small, to enable the operator to pass it through the strictured portion of the canal ; the latter was then divided from above downwards. Mr Fergusson, at this part of the operation took up a double-edged beaked knife, of small dimensions, which having reached the staff, was made to divide both sides of the prostate gland, and to lay open the neck of the bladder. The stone was then felt for with the index of the left hand, and removed with the forceps. The calculus, however, proved of a very brittle kind ; for it completely crumbled between the blades of the instrument, being probably of recent formation, and composed of the triple phosphate. The hæmorrhage was rather more copious than usual, owing to the increased inflammation of the part, brought on by the protracted derangement which it had undergone. It will be highly interesting to follow this case, as it but seldom happens that two operations of such importance are performed at the same time."—*Lancet.*

[When calculus and stricture co-exist, we are taught by pathology to regard the obstinacy of the latter as dependent upon the presence of the former; and it is a well-established practical fact that, if the stone be removed in the usual way, by cutting upon a grooved staff, sufficiently small to pass through the contraction, the stricture, however obstinate previously, will thenceforth hardly require treatment. If it were necessary to produce evidence in support of this, perhaps one of the most remarkable cases which could be quoted would be that of Robert White, the first patient on whom Mr Liston performed the operation of lithotomy. This man was admitted into the Royal Infirmary of Edinburgh, in the year 1821, on account of urinary symptoms, and when examined by the house-surgeon was found to suffer from stone in the bladder, together with a very tight stricture of the urethra, near the bulb. The house-surgeon was desired to dilate the stricture, as a preparatory step to the operation, and for six or seven weeks endeavoured to do so, without being able to get beyond three or four steps from the smallest sized instrument,—attempts to proceed further always inducing rigors, followed by febrile attacks. At last the patient, getting tired of the delay, left the hospital, and placed himself under the care of Mr Liston, who, justly regarding the stone as the cause of obstinacy in the stricture, resolved to perform the operation upon such an instrument as the contracted state of the canal would admit, and with this view got three staffs

constructed, of very slender calibre. All things being prepared, the operator tried in vain to introduce any one of these instruments, and at length requested the house-surgeon, who was present, to try if he could effect the introduction, which he, probably from his previous acquaintance with the passage, succeeded in accomplishing. A stone, weighing between three and four ounces, was then extracted. The patient never had a bad symptom,—and when the urethra was examined, about ten days after the operation, *no difficulty was experienced in passing a full-sized catheter into the bladder*.

Though unwilling to mention particular cases in support of a rule which we had supposed beyond all reach of question, we may add that of a military officer, now at the head of an important department in her Majesty's service, not far from London, and who, ten years ago, when residing near Edinburgh, suffered to an extreme degree from stricture, with repeated attacks of the most alarming complete retention, and constant uneasiness, so distressing as to occasion the frequent protestation that life, so far from being desirable, was an intolerable burden to him. In these circumstances, a stone in the bladder having been detected, was extracted, by cutting upon a very small staff, constructed on purpose to pass through the contracted canal. The patient recovered in less than a fortnight, without the slightest unpleasant symptom ; and from that time to this has been perfectly free from stricture.]

ASCENDING OR INTERMUSCULAR HERNIA.

In the *Medical Gazette* of March 15th, Mr Luke, surgeon to the London Hospital, communicates some cases under the above title, in the following words :—

" It will be remembered that an inguinal hernia of the ordinary kind, after issuing from the abdomen through the internal ring, *descends* in the inguinal canal in front of the spermatic cord in the male, and of the round ligament in the female, from whence it passes through the external ring to the scrotum in the former, and to the pubes in the latter.

" A hernia, however, at its exit from the abdomen, is liable to be pushed aside, or have its course altered, by any opposing obstacle ; for its tendency is always to pass in that direction in which it meets with least impediment to its course. In the cases before us such impediments do occasionally arise, and more particularly in the female,—a circumstance attributable to the lesser anatomical development of the canal and external ring in that sex, from which, probably, proceeds the more frequent occurrence of the form of hernia mentioned below. In the male sex the canal and rings are sufficiently large to allow of a hernial descent, so that we continually observe that the direction of an inguinal hernia in the male is downwards, unless it be turned aside, or its direction altered by artificial means, and especially by the pressure of a truss. In the female, however, natural obstacles occur in the downward direction ; it therefore sometimes happens that the lesser impediments to the progress of a hernia lie in an upward or outward direction, in which case the tumour, after passing from the internal ring, turns towards the ilium, and becomes interposed between the layers of abdominal muscles above and on the outside of the ring. Such herniæ are covered anteriorly by the internal oblique muscle, and bear nearly the same relation to the tegumentary surface as an ordinary hernia confined to the inguinal canal, but differ materially from it in relation to the internal ring. The tumour lies nearer to the ilium in this form of hernia, in a position which, being not usually occupied by hernia, may give rise to some difficulty in diagnosis, and may, through inadvertence, be mistaken for some other disease, either of the cæcum on the right, or colon on the left side. It also lies somewhat buried, when small, under a covering of muscular structure, and occasionally under an accumulation of adipose tissue, and may on that account be passed over altogether without notice. In its position it constitutes the kind of hernia which I have named above. It is important that such cases should be well understood ; and the relation of the following cases

will probably help this matter. Although not the first, the most perfect speci-
men of the kind of case referred to in the foregoing observations, occurred to a
person about sixty years of age, residing in the neighbourhood of Bethnal
Green. She was of a thin spare habit, and when I first saw her, had suffered
during four days from obstruction of the bowels and sickness, the symptoms
having increased in severity up to the time of my visit. On the day previous,
a fulness had been observed a little to the inside of the right spine of the ilium,
which had not been noticed during the two first days of her illness, and was
supposed to be connected with the cæcum, from the circumstance of its position
and apparent depth. When I examined the part very carefully, it appeared
to contain an ill-defined tumour, lying deeply, but within the walls of the
abdomen, and not within the abdomen itself. Its position was to the outside
of the situation of the internal ring, with its inner side resting upon the ring.
It was somewhat rounded in form, and painful on pressure. Connecting it
with the existing symptoms of intestinal obstruction, I concluded that it was a
hernial tumour in a state of strangulation, and advised an operation, in the
performance of which the integuments were incised perpendicularly over the
tumour, and, consequently, on the outside of the internal ring. The abdominal
tendon being divided, the tumour was brought into view, covered by the lower
border of the internal oblique muscle. It was about the size of a pullet's egg,
and had the ordinary characteristics of a strangulated hernia, but with its neck
of communication with the abdominal cavity at its lowest part, this being at
the internal ring, where the stricture upon the contents was found, apparently
produced by its margins. These were divided without opening the sac, and
the hernia reduced within the abdomen. Relief to the symptoms of obstruction
speedily followed this proceeding, and recovery gradually, though slowly, took
place, it being delayed by circumstances unconnected with the hernia.

" The next case came under my notice in consultation with Mr Byles, in a
female between fifty and sixty years of age, suffering from acute symptoms of
intestinal obstruction, attended by peritoneal inflammation and abdominal
tension. She was the subject of a moderate-sized umbilical hernia, which was
irreducible, without impulse, and inflamed. On examining the lower part of
the abdomen, there was discovered a small tumour on the left side, lying
deeply under a thick covering of fat, and exteriorly to the usual seat of an
inguinal hernia. It was painful when pressed. It was considered to be a
hernia, and in a state of strangulation, although some doubts were entertained
whether the umbilical hernia was not really the one strangulated. An incision
was made through the abdominal tendon, which exposed to view a small
tumour, lying, as in the former case, exteriorly to the internal ring. When
the sac was laid open, its communication with the abdomen was found to be at
its lowest part, and the intestine so tilted upwards over the upper and outer
margin of the internal ring which formed the stricture, that some difficulty
was experienced in getting at the part which is usually divided for its relief.
This division being accomplished, the hernial contents were reduced into the
abdomen, and the wound closed. This patient had a good recovery. At a
distance of five weeks from the operation she was seized with apoplexy, and
died.

" A modified form of the same kind of hernia came under my notice in a
post-mortem examination of a patient who had been operated on by the late
Mr R. C. Headington, formerly an upright and distinguished surgeon to the
London Hospital. The subject was a female about sixty years of age, and the
operation was performed in the London Hospital. The hernia, I was informed,
presented the ordinary appearance of an inguinal hernia of the left side, de-
scending upon the pubes through the external ring. The requisite incisions
were made over the tumour, and the lower part of the sac laid freely open.
Of the seat of stricture I was not informed. When efforts at reducing the
hernial contents were made, they were attended with apparent success; but,

on remitting the effort, the contents returned to their former place in the sac. Renewed efforts were attended by the same results; and, after being several times repeated, with each time a recurrence of the descent, were finally abandoned, and the contents were allowed to remain unreduced, the wound being closed over them. The patient shortly died.

"On dissecting the integuments from the lower part of the abdomen, the opened hernial tumour presented below the external ring in the usual manner, and was readily traced to its communication with the abdomen at the internal ring, but it also extended in a direction towards the spine of the ilium beyond the ring, and between the layers of the abdominal muscles. Thus the sac was found to be far more capacious than was suspected before death; and the circumstances attending its relations to the abdominal aperture explained the difficulty which had occurred during the operation. The hernial contents, when apparently reduced into the abdomen, had not been so in reality, but had been transposed from one part of the sac, and that the lowest, to the other or upper, which lay *above and to the outside* of the internal ring. No difficulty could arise in such a case in respect to diagnosis of the existence of hernia, yet to the operator an embarrassment might ensue like to that which occurred in this; and its relation is of importance, as forewarning him of a probable though remote contingency, and preparing him, by a foreknowledge of it, with the means best suited to meet the difficulty.

"These cases, even in the female, are unfrequent; they are still more so in the male, and, I believe, never occur in that sex, unless produced by means wholly independent of anatomical formation and development. They may, however, be produced by other causes; and the subject has an important bearing upon the application of trusses to the relief of the ordinary kinds of inguinal protrusions. From the manner in which a truss is usually applied, and from the sufficiency in the size of its pad, both the internal and external inguinal rings are guarded, and the more especially when the two are approximated by the descent of the former, as is common in old hernia. But in an incipient hernia, when the rings are in their normal position, or nearly so, a truss may be so applied as to guard the external ring and lower part of the inguinal canal only. In that case the hernia is not prevented from protrusion through the internal ring; and its increase in size may continue, notwithstanding this imperfect use of the instrument. If such increase does take place, the truss has no other effect than to alter the course of the hernia by preventing its *descent* through the canal and external ring, and constraining it to take that direction which alone is open to it. That direction appears to be upward and outward; and thus the intermuscular hernia, as described above in the foregoing cases, is produced. To prevent such a form of hernia in a male, arising from the use of a truss, is an important desideratum, and appears easily attainable by its proper application. As the occurrence is the result of pressure of the pad upon the lower part of the canal and external ring, while the internal ring remains unguarded, there are two courses open for selection. The one course is to remove the pressure of the truss altogether, by which means the hernia will have an opportunity of descending in its usual course: the other is to guard the internal ring also, and to prevent protrusion from the abdomen altogether. Of the two, it need scarcely be observed that the last is to be preferred. Although this is generally done, it is not always so; and it may serve a good purpose to show what may take place, and what has taken place, from inattention to this deficiency in the application of trusses. They should always be so applied as to guard the *internal ring*.

"An illustration of the above came under my notice a short time since, in the case of a gentleman about fifty years of age, who first applied to me in consequence of some uneasy feelings which he experienced in the abdomen, and irregular action of the bowels, attended by occasional flatulence and nausea. He also complained of pain in the region of the cæcum; in examining which, and the adjacent part, it was found that he was the subject of hernia. This

had descended partially into the scrotum; but he had been in the habit for some years of retaining it by means of a truss. A much larger tumour occupied the space between the crest of the ilium and the usual seat of the internal ring, which, by the communication of impulse, was ascertained to be connected with the lower tumour. Thus it was found that the entire hernial sac was of very considerable dimensions, and contained a large mass of viscera. Probably to this circumstance was referable the symptoms of intestinal derangement which were the immediate cause of his application. It became, therefore, an object of primary importance in the treatment, that the contents should be replaced within the abdomen. In the attempt to accomplish the reduction, the lower tumour was readily made to disappear ; but, as it did so, the upper tumour became more full and large. Attempts at reduction of the upper tumour in the upward direction were wholly unavailing ; but when pressure was made upon it in a direction downwards, in the course of the inguinal canal, while the other hand was kept upon its lower extremity, so as to prevent the contents from descending through the external ring, it was, by a little manipulation, partially returned into the cavity of the abdomen. Old adhesions of the contents, either to each other or to the sac, appeared to be the obstacle to the reduction being complete. Sufficient, however, was accomplished to afford some relief to the patient, and the intestinal disturbance became less severe. Should strangulation occur in this case, the circumstances which complicate it are well calculated to try the skill of the most experienced surgeon who shall undertake an operation for its relief; all which complication, with all its present ills and prospective embarrassments, I think, might have been prevented by the proper use, in the right position, and at an early period, of an efficient truss."—*Medical Gazette,* No. 1163.

<center>ANEURISMAL VARIX IN A STUMP.</center>

A gentleman, of about thirty-five years of age, had his right foot removed at the ankle-joint, in the spring of 1847, by Mr Liston, on account of scrofulous disease of the bones of the tarsus. Union by the first intention occurred, save where the ligatures escaped ; and the stump required no second dressing. About a fortnight after the operation, a swelling was observed over the inner side of the stump, apart from the wound, about the size of a large walnut, red, tender, and fluctuating. Mr Cadge, who visited the patient during Mr Liston's illness, believed that abscess had formed, but hesitated to open it, on finding that it pulsated violently at every part, and that a loud whirring murmur was audible in it with each beat of the pulse. It was finally opened on one side, where the pulsation was least violent, and a quantity of pus was evacuated, after which the incision healed. The cure was retarded by the subsequent formation of a sinus at the back of the stump, which, however, healed under the application of pressure. The whole weight of the body could be borne without uneasiness by the naked stump ; indeed, the case proved, in an eminent degree, the superior advantage of the operation. The pulsation and bruit, however, continued, and in January 1849 (about fifteen months after the amputation) attracted the attention of the patient, who consulted different London surgeons on the subject. Mr Key regarded the case as one of false aneurism, and, without giving a positive opinion, hinted at the necessity of some operation. Mr Cadge again saw the patient, found the same pulsation and bruit, both somewhat increased in intensity, as had existed a year before, and now noticed a pretty distinct elastic swelling, about two inches long and of two fingers' breadth, over the inner side of the stump. This tumour pulsated violently, and a loud whirring murmur could be heard at some little distance. When the posterior tibial artery was compressed above, the pulsation ceased, and the tumour became flaccid; but both tumour and pulsation returned when pressure was removed from the vessel. Attempts were now made to cure the aneurism by compressing the vessel above, by means of tourniquets; but about this time the patient was seized with symptoms of obstructed bowels, and died

eight days after the commencement of the attack. Mr Cadge was permitted to dissect the stump, and describes its appearance as follows :—

"I was permitted to remove the stump, about six inches above the extremity, and, some injection having been thrown into the arteries, a careful dissection was made. The first thing which attracted notice was, that the two companion veins of the posterior tibial artery were filled with injection. On tracing the artery downwards, a large branch, probably the internal plantar, was found to arise from it at the inner side of the stump; this branch, about the size of a crow-quill, ended, within a quarter of an inch from its origin, in a bulbous enlargement, about the size of a horse-bean, which communicated, by means of a large short branch, with the posterior tibial vein, and thus formed an aneurismal varix. The tibial artery and veins were continued onwards to about the centre of the lower end of the stump, where they ended abruptly, being of full calibre to their termination; there was no distinct tumour of any kind. In the leg, the vessels were bound down deeply by the strong fascia which passes between the tibia and fibula; close to the ankle, this fascia had been interfered with by the operation, and the vessels escaped from beneath its lower border, and mounted over the root of the inner maleolus, separated from the bone by the bulbous extremity of the tibial nerve; and thus at this point, where the varix existed, they were close beneath the skin, and, both artery and veins beating strongly, gave the elastic feel and appearance of defined swelling, which had been mistaken during life for the sac of a circumscribed false aneurism. The dissection of the stump showed how well adapted it was to bear pressure. The plantar fascia, where it had been cut from the os calcis, had become attached to the tendo Achilles behind, and in front to the cut ends of the extensor tendons; between it and the lower end of the tabia there was merely some reddish loose cellular tissue; but between the fascia and the skin there was a great thickness of dense granular fat, much more than is usually found over the heel, and this not only served as a most efficient pad, but also reduced the difference in the length of the two limbs to less than two inches." —*London Journal of Medicine.* Feb. 1850.

[Mr Syme informs us, that he was consulted on this case, and advised that the pulsating tumour should not be interfered with.]

MIDWIFERY, AND DISEASES PECULIAR TO WOMEN.

HEMORRHAGE FROM THE UMBILICUS.   BY DR BOWDITCH.

There are five classes of hemorrhage from the umbilicus.

1st. A bleeding occurs soon after labour. This is generally owing either to insufficient care in applying the ligature to the cord, or to a contraction of the cord, which, at the time of being tied, is large; and the fluids, subsequently exuding, allow a relaxation of the ligature. This, if noticed early, can be easily restrained by a new string.

2d. One case is recorded by Dr Hill (*Lond. Med. Gaz.*, from *Dublin Med. Press*, vol. lii, p. 556), in which great hemorrhage occurred, in consequence of a practitioner having forcibly removed the cord, from fear that erysipelas would ensue, if it were allowed to remain. It is to be hoped that few cases of this kind will ever occur.

3d. There is another, of which we have alluded to one specimen, given in Dr Jackson's notes of a case treated by Dr Hayward. The bleeding began on the third day from the removal of the cord, and, notwithstanding every effort, death occurred in twenty-four hours. In this case, there was probably an imperfect closure of the vessels from non-coagulation of the blood.

4th. The largest class of serious bleeding is like those reported by me. In these, the funis drops off, and usually nothing abnormal is observed, or, at most, only a delicate sponginess in the umbilicus. After three or four days, an oozing commences, which either increases with every application, or, perhaps,

is slightly checked by astringents, &c. ; but it almost always proves fatal ; and the patients, before death, become perfectly blanched. In these cases, it is very common to observe an alteration in the functions and structure of the liver ; the dejections being non-bilious, and, at the post-mortem examinations, disease of the hepatic structure, or of the ducts, being observed.

5th. Finally, we have the really hereditary hemorrhagic tendency. The blood, in these cases, oozes from the gums, intestines, under the skin, &c. There are few cases on record of this class in new-born children, unless we consider our own cases, and the class of hemorrhage described as our fourth species, to be such ; but there are numerous examples of it among adults, in whom, however, the navel seems to have healed perfectly, soon after birth.— *Amer. Journal of Med. Sciences,* January 1850, p. 69.

CAUSES OF CATARRHAL INFLAMMATION OF THE CERVIX UTERI.
BY PROFESSOR DUBOIS.

If there is a fact (says Dubois) well made out, it is, that catarrhal inflammation of the uterine neck is most frequently a result of one or other of the following causes. They are enumerated in the order of their frequency of occurrence as causes of this affection :—

1. Abortion.
2. A delivery at the full time which has been painful, or after which rest in the horizontal posture has not been long enough continued.
3. Imprudence during a menstrual period.
4. Sexual intercourse repeated too often, or at improper times.—*Gazette des Hôp.*, Janvier 26, 1850.

CASE OF PROLONGED SLEEP VICARIOUS OF MENSTRUATION. BY M. VILLARTAY.

This girl, æt. 17, had during a whole year, dating from the suppression of the menses, a sleep, otherwise apparently natural, prolonged for three days in each month. The period of sleep corresponded with the usual period of the continuance of the menses in the girl. She had never had convulsions, or any disease of the head. After the menses were restored, the extraordinary sleeping was no longer observed.—*Journal de Méd. et de Chir.*, Fevrier 1850, p. 77.

SANGUINEOUS TUMOUR OF THE VULVA—RUPTURE—DEATH DURING LABOUR.
BY M. WIFFELS.

A woman, already the mother of eight children, of good constitution, and in perfect health, died suddenly during labour, without there being any evident assignable cause for the event. While labour was progressing favourably, and before the rupture of the membranes, a swelling appeared suddenly in the right labium. It increased rapidly in size, and in a few instants became tense and fluctuating. It was at first suspected that the tumour was a hernia ; but, after enlarging to the size of the fist, it burst during a pain, projecting the blood to the distance of some feet. During the uterine contractions, the blood flowed away in jets, synchronous with the arterial pulsation. In the interval of the contractions, it oozed away more slowly from the wound. After a few pains, the woman complained of a feeling of choking, from want of air, and shortly died undelivered.—*Annales de la Soc. de Méd. de Roulers,* and *Journal de Méd. et de Chir.*, 1850, p. 74.

DISTINCTION BETWEEN ENGORGEMENT AND HYPERTROPHY OF THE UTERUS.
BY M. HUGUIER.

1. In engorgement of the uterus there is a complex anatomico-pathological lesion. The proper tissue of the organ is not alone altered, but, in addition, several of the other tissues which enter into its anatomical composition. In simple hypertrophy there is no alteration of tissue—it is only more abundant.

2. Engorgement is most frequently the consequence of an acute inflammation, which has appeared several times, at short intervals ; or of a chronic in-

flammation, which, after itself disappearing, has left alterations which continue to extend, although the inflammation has ceased. Simple hypertrophy, on the other hand, is developed without previous inflammation, most frequently under the stimulation or too often repeated action of the organ.

3. In engorgement the colour, consistence, heat, circulation, sensibility, and the secretions of the organ are altered. Nothing of this nature occurs in simple hypertrophy.

4. Engorgement degenerates frequently—hypertrophy very rarely, if ever. Engorgement frequently disappears under proper treatment—hypertrophy almost never. Engorgement is frequently complicated with inflammation, and from the slightest causes—hypertrophy much more rarely.

5. The prognostic is consequently much more favourable in the one case than in the other.—*Gazette des Hôp.*, Janvier 22, 1850.

EPILEPSY AND PUERPERAL CONVULSIONS. BY DR TYLER SMITH.

The two diseases, epilepsy and puerperal convulsion, are so alike in their general features, that any one reasoning *à priori* would be apt to say that epileptics must necessarily be prone to the convulsions of the puerperal state, particularly when the excited condition in which the entire nervous system is brought by gestation and parturition is considered. But, upon reflection, it would become evident, that were this the case few married epileptics could survive the repeated shocks of the puerperal seizures during the era of child-bearing. There are, too, certain points of difference between epilepsy and puerperal convulsions, both in the attacks themselves, and in their antecedents and results, which, upon examination, go far to establish the distinctness of the two diseases.

Epilepsy is generally a chronic, puerperal convulsion always an acute, disease. Epilepsy is generally preceded by the characteristic aura,—this is never present in puerperal convulsion. Puerperal convulsion is generally preceded by œdema of the extremities,—a thing rarely observed in epilepsy. Epilepsy, when long continued, often leads to idiocy or weakness of intellect, with occasional paroxysms of insanity,—puerperal convulsion, when it affects the intellect, produces acute mania. The fits in puerperal convulsion are much more severe, and asphyxia is more nearly approached. The fits are many in number, following each other in rapid succession, and there generally is insensibility in the intervals; while in epilepsy, the disease recurs by fits of one or two at a time, often at long intervals, with the speedy recovery of consciousness, after the subsidence of the convulsion. Puerperal convulsion is a disease of days, or even hours,—Epilepsy is a disease of years. It is seldom that epilepsy terminates fatally, until the nervous system of the patient has been worn out by repeated seizures,—while in the puerperal disorder the first attack may kill. Epilepsy is connected with the ordinary functions of the body, occurring at the most varying times, and from the most varying causes,—while puerperal convulsion belongs to an extraordinary function, of limited duration. And after asking the question—Is epilepsy followed by puerperal convulsion? another question is suggested—Are the subjects of puerperal convulsion predisposed to attacks of epilepsy? If we examine into actual cases we shall find the facts to be, that the existence of epilepsy is by no means necessarily followed by puerperal convulsion on the occurrence of gestation and parturition; and it would be difficult to prove that there is in epileptics even a greater predisposition than usual, to the puerperal attack. In epilepsy, too, the exciting cause is generally eccentric,—as, for instance, some irritation of the stomach, bowels, ovaria, &c. The circulating mass is not vitiated as far as its examination has yet gone. In puerperal attacks, there are unmistakeable indications of toxæmia, blood-poisoning, or centric irritation of the spinal marrow, the organ upon which all convulsive actions depend. The treatment required in the two diseases is very dissimilar,—in the one, the time for treatment is in the intervals between the fits; in the other, it is in the fits themselves. We should as

seldom bleed in epilepsy, as we should omit bleeding in the puerperal disease. If it were part of the present inquiry, it might be shown that there is a greater resemblance between the convulsion of dentition and the convulsion of parturition than between the latter and epilepsy.—*Lancet*, January 5, 1850.

MATERIA MEDICA AND THERAPEUTICS.

ON PRUNUS VIRGINIANA.   BY DR DOUGLAS MACLAGAN.

Under this name, borrowed from the United States' Pharmacopœia, a bark has, during the last year or so, been employed in considerable quantity in this country as a medicine, and has found favour with several medical men.   This, it is presumed, is the bark which is officinal in the United States, and which, though bearing in the *Pharmacopœia*, U. S., the pharmacological designation of *Prunus Virginiana*, is not the bark of the plant which was so named by Linnæus.   The *Prunus Virginiana* (botanice) of Linnæus, is a small shrub, resembling *Cerasus Padus*, bearing a small dark-red globular astringent fruit, which is known in America by the name of Choke cherry, and is described by Torrey and Gray, Flor. of N. America, under the name of *Cerasus Virginiana*.   The *Prunus Virginiana* (pharmacologice) of the United States *Pharmacopœia* is the bark of a very different species, a tree from 60 to 100 feet high, the *Cerasus serotina* D.C., the Wild or Black cherry of the Americans, but which Michaux appears to have confounded with the shrubby plant, and has also named *Cerasus Virginiana*.   Sir W. Hooker, in the *Flor. Boreal. Amer.*, adopts Michaux's name for the large tree, but has obviously transposed the two names, for he quotes Linnæus's synonyme of *Prunus Virginiana* for the large tree, and applies the name *C. serotina* D.C. to the shrubby plant, and calls the fruit of the large tree Choke cherry, whereas it should be Wild cherry or Black cherry.

Hooker's description of the large tree, under the name of *Cerasus Virginiana*, corresponds with that given by Wood and Bache, in the United States Dispensatory, of the same tree, under the name of *C. serotina* D.C., with the synonyme *C. Virginiana*, of Michaux, and answers to specimens sent to Dr Maclagan from Canada by Dr Philip Maclagan; whilst Hooker's description of the shrub under the name of *C. serotina*, answers also to specimens sent from the same quarter.

The two plants appear to be very distinct in every respect, except the names, which have thus been transposed and confused.   The nomenclature may be satisfactorily arranged by calling the shrub *C. Virginiana*, Torrey and Gray, and the large tree *C. serotina*, D.C.   At the same time it must be added, that Sir W. Hooker (Flor. Bor. Am.), expresses doubts as to their specific difference, remarking that the serratures and tufts of hair on the underside of the leaves, are undoubtedly variable, and that in point of form of foliage, it is not easy even to distinguish the American shrub from our *C. Padus*.   The large tree *C. serotina* D.C., which is the species officinal in the United States Pharmacopæia, on account of its bark, is also used as timber by the American cabinetmakers.   Sir W. Hooker gives Canada as a doubtful station for it, but it is found, at all events, in Canada-West, when Dr P. Maclagan saw one specimen cut down which was 80 feet high.

The bark, as found in the shops of the United States, is thus described by Wood and Bache :—It is in pieces of various sizes, more or less curved laterally, usually destitute of epidermis, of a lively reddish cinnamon colour, brittle and pulverizable, presenting a reddish grey fracture, and affording a fawn-coloured powder.   When fresh, it has the odour of peach leaves, and yields by distillation, according to the experiments of Dr Procter, a volatile oil, conjoined with hydrocyanic acid ; the same as is got from cherry-laurel leaves.   It contains also a bitter principle and tannin.   The Americans use the bark recently dried, as it deteriorates by keeping.

The bark, as it was last year brought to the shops in Edinburgh, is in narrow stripes, varying in length from a few inches to a foot and a-half, with a smooth gray epidermis, which curls itself off in horizontal stripes, a character which is very marked in *C. serotina*, but is also observed in other species. On pulling off the epidermis, a suberous layer of a greenish white colour and silky lustre is exposed. The inner bark is of a bright cinnamon red, inclining to orange, and there are often found adhering to it portions of a very white alburnam. This wood is tough, and not easily pulverized. It is bitter and very astringent to the taste. On inquiry as to the source from whence this bark, which was sent from London, was derived, it was stated to be the officinal American bark, of British growth. Now, *C. serotina* is not a common tree in Britain. This bark is, from its appearance, not that of *C. Padus*, nor of the shrubby *C. Virginiana*, from which circumstances, as well as from its general aspect, Dr M. concludes that it is merely the bark of *C. Avium*.

The druggists here, dissatisfied with this English bark, have got the officinal substance imported from America. It is now brought in 1 lb. packages, as made up by the Shakers in America. It is in small fragments not more than an inch long, is free from epidermis, and otherwise corresponds with Wood and Bache's description.

Dr Maclagan made various experiments with different samples of the English bark, to determine whether or not it would yield any hydrocyanic acid, but though he subjected four separate portions to distillation, he could not obtain from it the least trace of this active principle. It is obvious, therefore, that the bark of English growth wants one of the most important constituents of the American bark, and is comparatively of little value. Dr Maclagan's trials of it in practice had not tended to raise it in his estimation. It did not appear to have any special advantage over other bitters, of which there are plenty, and from the great quantity of altered tannin and extractive which is taken up in the infusion, it even appeared frequently to disagree with the stomach. From the American imported bark, however, Dr M. separated hydrocyanic acid in small quantity by distillation. It made a very bitter infusion, and deposited some tannin on cooling. Alcohol appears to take up more of the bitter, and water more of the astringent, matters of these barks. Even the American bark, however, which is now in the best shops substituted for the English, does not appear to possess that combination of sedative and calmative action with tonic power, for which it is preferred in the United States, and did not appear to Dr M. to be so useful, and cannot be so uniform in quality, as a combination of some of our common bitters, such as colombo with hydrocyanic acid, a form of prescription which had proved very efficacious in his hands. In fact the want of calmative property had led to its being generally prescribed with hydrocyanic acid added to it, and thus it did not appear to Dr M. to have any special advantages.

The fact that the bark of the *C. serotina* yields hydro-cyanated oil has been established by the experiments of Procter quoted above; that the bark of *C. Padus* yields hydrocyanic acid also has been long known. Dr M. had made some experiments with the fresh twigs of *C. Virginiana* from the Botanic Garden of Edinburgh, and found that it yielded hardly any volatile oil, not enough to render the distilled product milky, but it gave a certain amount of hydrocyanic acid.

From two ounces of fresh bark distilled with water, he obtained a distillate which gave 0.08 of real hydrocyanic acid ; but the decoction contained little tannin, was barely bitter, and had rather a sweetish taste. It was obvious, therefore, that the bark of the shrubby *C. Virginiana* would be of little use as a medicine.

Dr M. likewise examined the bark of *C. Padus*. From two ounces of the fresh bark he got by distillation a fluid which had a distinct layer of oil on the surface, and contained 0.26 of real hydrocyanic acid, or more than three times the amount got from *C. Virginiana*. The decoction of *C. Padus* also was

richer in tannin, and was strongly and agreeably bitter. Dr M. had not had an opportunity of examining the fresh bark of *C. avium*, or of *C. serotina*, but from the examination of the English and American commercial barks, which he presumed to be derived from these trees respectively, and from the above examination of *C. Padus*, it appeared to him that if any such bark was to be used in this country at all, that of the last-named species would probably answer as well as any other.—*From Report of Proceedings of Botanical Society of Edinburgh*, March 14, 1850.

EFFECTS OF THE VICHY MINERAL WATERS ON THE URINE. BY M. DURAND-FARDEL.

The reputation of the Vichy waters as a remedy in calculous affections, has been connected with their supposed property of rendering the urine alkaline. M. Durand-Fardel has examined the re-action of the urine in 87 patients whilst under treatment at Vichy, with a view to ascertain what the real effect on the acidity of the urine is. The patients were taking daily a bath, a great number of douches, and from five to seven glasses of the water, each glass containing about seven ounces. The following are his results :—

One of the most ordinary effects of the treatment is to remove the natural acidity of the urine, and render it neutral or alkaline. Only in about one-third of the cases is the alkalinity marked and persistent. In the greater number it is neutral or feebly alkaline, and the degree of the alkalinity varies from day to day.

In a few rare cases the urine remains acid during the whole treatment.

It is in general difficult to appreciate the circumstances which cause variations in the acidity or alkalinity of the urine. The supervention of diarrhœa generally renders the alkalised urine acid, but sometimes only diminishes the degree of alkalinity. The act of digestion sometimes temporarily diminishes the alkalinity. The particular diet of the patient seems to have less effect than the constitutional predisposition, in modifying these states of the urine.

In two cases of uric acid gravel, amelioration was effected, though the urine remained acid during the whole course of treatment.

It appears from all that M. D-F. has observed, that the degree of alkalinity of the urine, is not in direct proportion either to the dose of the waters, the nature of the disease, or the results of the treatment ; that consequently it cannot, as has been supposed, serve as a guide in determining to what extent the waters should be used.—*Gazette des Hôpitaux*, 19th Jan. 1850.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

DEATH FROM CHLOROFORM-INHALATION.

A patient, of the name of William Bryan, died in the Public Hospital of Kingston, Jamaica, while under the influence of chloroform. The following was the medical evidence given next day (January 30, 1850) at the inquest :—

" Joseph Magrath, surgeon, Public Hospital, sworn, states,—William Bryan was yesterday placed on the table in the operating-room, for the purpose of having performed on him a surgical operation. As it would be attended with considerable pain, it was deemed advisable to place him under the influence of chloroform previously. I had about a drachm poured on the sponge, and applied it over his mouth and nostrils, but at first not in close contact—at no period was the atmospheric air totally excluded. He bore it badly, and I was frequently obliged to withdraw it, to facilitate his breathing. The stage of excitement which is usual came on, and he struggled and kept away the sponge for some seconds ; it was again reapplied, when, after a few more seconds, observing that he made one stertorous inspiration, I removed it altogether.

He ceased to breathe; but, after some seconds had elapsed, made another inspiration, and this occurred several times, until at length respiration ceased entirely. The moment it was perceived that his respiration was imperfect, he was dashed with cold water on the face, had a bottle of ammonia occasionally applied to his nostrils, and respiration was also endeavoured to be restored by occasionally depressing the ribs and sternum; finally, electricity was employed and continued until it was ascertained that he was dead. The deceased had been a patient in the hospital for some time, for a cancer of the penis. The penis was amputated previously. He had never been put under the influence of chloroform. When that operation was about to be performed, he requested to be put under its influence; but it was not deemed necessary then, as the operation would last but a few moments in performing it. Chloroform is used in almost every case of operations in this institution, and several persons have been operated on who, we think, could not have borne the shock, unless they had been placed under its influence. The chloroform used is imported from London, from one of the first druggists. The bottle from which this chloroform was taken had been opened in the morning, and used on a boy in twice the quantity that was used on the deceased. I am always particularly cautious in the use of it, and a few minutes before Bryan was placed on the table I said to Dr Scott,—' The more frequently I employ the chloroform, the more I am convinced how necessary it is to be very careful in the administration of it,' or words to that effect. This is the first case of the kind that has occurred in Jamaica, I believe. It is not only in cases where surgical operations are required that chloroform is used, but in cases of labour, and many others, and invariably with success. I stated to the deceased that chloroform was about to be applied, and instructed him how to inhale it, and he made no objections whatever to its employment.

"John Fergusson, M.D., sworn, states,—Lives in Peck Street. I examined the body of William Bryan, a large muscular man, *with a short thick neck*, and having a good deal of adipose substance throughout the body. On dividing the scalp, which was very thick, dark, almost black, fluid blood flowed freely from the incision. On dividing the skull with the saw, the lateral sinuses were opened, and thick blood flowed in a stream from within the cranium. On separating the upper part of the skull from the dura mater, blood was seen oozing from the surfaces of both the bone and membrane which had been in contact. The arteries of the dura mater were filled with blood; the vessels of the membranes of the brain and cerebellum showed much congestion, especially on the lateral and posterior part of the hemispheres of the brain. There was much congestion, also, in the minute vessels of the pia mater, under the commissure of the optic nerves, and the arteries of the membrane covering the pons varolii were minutely injected. There was also congestion of the minute arteries, at the origin of the bundle of nerves passing out of the medulla oblongata. On dividing the pons and medulla oblongata, the surfaces of the incision appeared redder than natural. There was no effusion of blood in any part of these structures. The white substance of the hemispheres, when cut across, showed innumerable red points, and it had a slight rose tint. The liquid in the ventricles was little more than usual. The corpora striata and thalami were free from congestion or disease. The substance of the brain was generally sound. The whole surface of the cerebellum and its vessels minutely injected; its substance throughout had a slight rose tint. Chest :—Both lungs were congested with blood, especially posteriorly. The trachea and bronchi were also highly injected.} The epiglottis at its free edge had a bright red border, and was doubled laterally, as if its sides had been pressed together. The mucous membrane of the larynx was of a deep red colour, from injection of its minute vessels. The heart had its right ventricle soft, flabby, and thin, and it had undergone considerable fatty degeneration; the walls of the left ventricle were soft, and had undergone in a slight degree the same degeneration. The valves of the aorta had a semicircular ring of cartilaginous texture at their

base, and the flaps were small, and probably not quite efficient for their func-
tion. The internal surface of the heart and aorta were deeply stained with
the colouring matter of the blood. The right side of the heart contained dark
fluid blood. The abdomen :—Liver was large, pressing up into the cavity of
the chest, and gorged with dark-coloured blood, which flowed out freely on
incision. The gall-bladder contained about six drachms of bile. The spleen
was soft, easily broken down, and resembling a black coagulum of blood,
inclosed in a sac. Stomach :—Reddish, filled with air ; innumerable vessels,
seemed ramified both on its external and inner surface, lying between the
coats of the stomach ; it contained only a small quantity of gruel. The mucous
membrane of the stomach was healthy ; many minute red vessels and points
were to be seen in patches here and there upon its surface. There was a small
patch of ecchymosis on the mucous surface of duodenum. The kidneys
were congested with black blood, otherwise sound. The bladder was healthy,
containing a small quantity of urine. The large vessels of the mucous surface
were injected with blood. The blood was fluid, and there was not the slightest
trace anywhere of a coagulum. 1 attribute the death of William Bryan to the
inhalations of chloroform. The diseased state of the heart of the deceased pre-
disposed him to the fatal effects which followed the use of chloroform. The
use of chloroform was justifiable. It was administered in a proper manner,
and in a moderate quantity. The deceased might have lived for a number of
years ; but persons with that disease are subject to sudden death when in its
more advanced stage. I consider that the benefits derived from the use of
chloroform in surgery are much too important that they should be abandoned,
because an occasionally fatal effect occurs from its use ; but that the occurrence
of such fatal cases renders it necessary that every precaution should be taken
to select the cases which are adapted to its application. This condition of the
heart does not manifest itself by the same evident symptoms which are pre-
sented by other diseases of the heart, and there could have been no possibility
of detecting its existence.

" The jury delivered the following verdict :—'That the deceased died from
the inhalations of chloroform ; and the jurors are of opinion that the diseased
state of deceased's heart predisposed him to the fatal effects which followed the
use of the chloroform. Aged twenty-nine years.' "—*Jamaica Despatch,* 5th
February.

POISONING BY SULPHURIC ACID IN THE RECTUM.   BY DR DEUTSCH OF NICOLAI,
UPPER SILESIA.

The wife of a merchant, fourteen days after delivery, and her infant, a feeble
small female, were ordered each a clyster of camomile infusion with oil. The
midwife went to a cellar for the required oil, and brought out a bottle, from
which, without looking further at its contents, she poured a quantity into the
camomile infusion. It was somewhat dark, and there was a bustle in the room,
so that the nurse did not perceive anything unusual on mixing the fluids. The
clyster was given both to mother and child, to the former two large, to the
latter two small syringefuls, in immediate succession. The woman immedi-
ately complained of severe burning pain in the fundament, and of cutting and
burning in the lower belly. When light was brought, it was seen that, instead
of oil, sulphuric acid had been given. Dr Deutsch, on being immediately called,
found, on the mother, the skin of the buttocks, the anus, and a portion of the
thighs highly reddened, punctiform abrasions and black and red spots upon
the mucous membrane of the anus, and within the verge. The woman com-
plained of burning and splitting pains in the lower belly, especially along the
course of the sacrum and at the anus, and had frequent calls to stool, with
painful tenesmus ; and there was evacuation of small quantities of bloody watery
stools, mixed with reddish and blackish shreds, and with lumps of coagulated
blood. The excitement was great, and there were frequent vomitings. On
the bed and linens were seen a great many holes burned out, with reddish mar-

gins. The injected fluid was discharged, along with fecal masses, before Dr D. arrived. The child showed on the breech and genital organs the same appearances as the mother, and it cried incessantly ; but there was no alvine evacuation. It appeared probable that, immediately on the contact of the injected fluid, the rectum of the child had closed so much as to prevent the ingress of any of the fluid. This supposition was supported by the appearance of the deeply burned binder, the comparative slightness of the symptoms, and the successful result of the case. Dr D. ordered injections of milk, with carbonate of magnesia, and applied the same as wash to the exposed parts. The mother got by the mouth almond-emulsion, with carbonate of soda, and extract of hyoscyamus. At first the injections, on account of the tenesmus, were retained but a very short time ; but afterwards they were kept longer, and gradually diminished the calls to stool and the pain in the belly. Next day there followed frequent small painful evacuations from the bowels, and as the pain became greater, and extended to the hypogastric region, which was very tender on pressure, Dr D. applied 16 leeches to the sacral region, the lower belly was covered with anodyne emollient fomentations, the injections of milk were replaced by infusion of linseed, with poppy heads, and the external injuries smeared with oil. Under this treatment—by which internal remedies were set aside—the pain, tenesmus, and purging gradually became less, till, at last, in eight days, nothing remained but slight tenderness in the rectum. The child, upon which the injuries were confined to the outer skin, got well in a few days. The amount of sulphuric acid was probably about three-eighths of a pound, and the amount of camomile infusion, with which it was diluted, was about four times that of the acid.—*Schmidt's Jahrbücher*, No. 11, 1849.

POISONING BY CORROSIVE SUBLIMATE.   BY MR TIEZELLE.

Mrs M., aged 26, took, on a Monday evening, one drachm of the salt in solution, supposing it to be an infusion of capsicum, in rum. The poison produced intense burning of the throat and fauces, but this did not excite alarm, as she expected some such effect from the capsicum. Vomiting of a dark frothy substance, and purging, came on in an hour, and continued at intervals during the night and part of the succeeding day ; but the patient went about her household duties, and did not think she had taken poison till the Wednesday morning, when she called in medical aid. She was found with brown dry mouth and tongue, with burning in the throat and tongue ; flushed countenance ; pulse 70, full and regular. White of egg was given in repeated doses, and large quantities of mucilage, with ten drops of laudanum every hour. The patient continued to improve till the fifth day, when vomiting and purging of dark grumous matter came on, with stupor and delirium, which ended in death on the sixth day. The pulse did not rise above the natural rate, and maintained a good degree of fulness and regularity till within a few hours of death.— *Dublin Medical Press*, from *Boston Med. and Surg. Journal*.

[It is not stated what means were taken to ascertain the fact, that the quantity swallowed amounted to a drachm. Had such a quantity been actually taken, it is hardly conceivable that the patient could have attended to her household duties for thirty-six hours afterwards, and that she should only have begun to suspect that she was poisoned after the lapse of this period. The symptoms of irritant poisoning usually supervene with extreme rapidity after large doses of the corrosive muriate.]

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MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Session XXIX.—Meeting VII.—*February* 20, 1850.—Dr Bennett, Vice-President, in the Chair.

CAVITY IN THE LUNG.

Dr Spittal produced the lung of a woman who had been recently found dead, and of whose early history nothing was known. The apex of the left lung was adherent to the wall of the chest, and contained a cavity of the size of a walnut, lined with a bluish-white semi-transparent fibrous membrane. The cavity did not communicate with the bronchi; the pulmonary tissue surrounding it was infiltrated with black pigment, and contained a few small hard and grey-coloured masses resembling chronic tubercle. A few similar masses were found in the other lung towards its apex. When microscopically examined, they were seen to consist of an irregular corpuscular element. Dr S. was inclined to regard the preparation as illustrative of the spontaneous cure of tubercular disease of the lung.

Dr Bennett, on examining the specimen, said that his impression was, that this was not an example of a tubercular cavity. There was no hardening round it, no distinct evidence of tubercle in the other lung, while the appearance of the cavity at once suggested the probability of its being a dilated bronchus. He exhibited a coloured lithographic drawing, which gave a good view of the appearances presented by the cicatrices of tubercular deposits in the lungs.

Dr W. T. Gairdner said, that diminution in size, and even cicatrization of cavities, was not unfrequently seen in lungs in which the tubercular deposition was in active progress in other parts, and when there could be no reasonable doubt, therefore, that the cavities were tubercular in their character. The same might be said of calcareous concretions, which were frequently found in lungs, where, in other parts, tubercles were advancing, and where their formation from tubercle was self-evident. The spontaneous cure of tubercle in the lung, in so far as relates to the drying up of tubercular matter, and the healing of tubercular ulcers, was abundantly proved by the facts of morbid anatomy, when viewed on a large scale. But in regard to individual specimens, such as the one before the Society, there was almost always a good deal of difficulty, arising from the fact, that concretions are formed in the lung from every kind of effete exudation; and that cavities, too, of a very different mode of origin from tubercular ulceration, underwent precisely the same transformation as these. The extremely smooth and glistening appearance of the membrane, the character of the surrounding tissue, and the very scanty evidence of the existence of tubercular matter, at least to such an extent as to cause so large an ulcer, combined to render it very probable that the cavity in Dr Spittal's case was not tubercular. Dr G. indicated several modes in which cavities were formed in the lungs, and mentioned his intention of shortly exhibiting to the Society some drawings and preparations illustrating this subject.

Dr Spittal was inclined to retain his original opinion, which was strengthened by the facts, that the cavity did not communicate with the bronchi at all, and that it was surrounded by small grey and hard masses, which he believed to be tubercle in the chronic state.

Some conversation followed upon the subject of the sanability of phthisis, in

which Dr Maclagan, Dr Bennett, Dr Myrtle, and Dr Taylor took part. Dr Simpson related one remarkable case which had occurred in his own practice, in which a young man, of a delicate family, after suffering from most of the general symptoms of consumption, and exhibiting the physical signs of the disease, emigrated to Australia, lived there for sixteen years, and finally died of a totally different complaint.

Dr Seller remarked, that the old practitioners had a term, "catarrhal phthisis," under which they included all cases of hectic fever, with purulent expectoration and emaciation, which recovered. They were pleased to doubt the possibility of recovery in cases of true phthisis; but modern researches had rendered it all but certain, that many cases of tubercular phthisis were erroneously referred to the class of catarrhal or sanable consumption.

Dr John Gairdner made some observations upon the comparative infrequency of phthisis in certain rural districts, and particularly to the alleged immunity from the disease enjoyed by the inhabitants of Australia. It had been stated, that the few cases observed in the Australian colonies were imported from Europe.

TUMOUR OF SUPRA-RENAL CAPSULE.

Dr W. T. Gairdner read a communication from Mr Craig, surgeon, Ratho, giving an account of a case of malignant disease of the supra-renal capsule, which had lately occurred in his practice. The patient, when 34 years of age, sustained a severe injury by a cart falling upon him and bruising the loins. After a few days' confinement he recovered, and for twenty-six years continued healthy and robust. In February 1846, after some violent exertion, he passed some bloody urine with considerable pain, but in a few days became to all appearance as healthy as ever. In April 1849, he began to suffer from neuralgic pain of the right hip and leg, most severe when he was in a sitting posture; the general health at this time was good, and no urinary symptoms were observed. The abdomen was carefully examined, and no tumour detected. In July the course of the *left* sciatic nerve became the chief seat of pain; and pressure from behind over the seat of the left kidney aggravated his sufferings. Flatulent distension of the bowels, capricious appetite, and restless nights, soon followed; the patient, after a variety of treatment, lost flesh considerably; and, finally, towards the end of July, a hard distinct tumour, as large as a melon, and perfectly moveable, could be felt in the left hypochondrium. Dr Begbie now saw the patient along with Mr Craig, and after careful examination, was at a loss to decide upon the precise nature of the tumour, but suspected the kidney to be the viscus implicated. The urine contained large crystals of oxalate of lime, likewise uric acid crystals, and amorphous matter. Rapid emaciation was now observed; the lower extremities became gradually paralysed; the sufferings of the patient were most acute, and in January 1850 the case terminated fatally.

Sectio Cadaveris.—A large tumour behind the descending colon occupied the whole of the left hypochondrium, extending from the diaphragm to the ilium, and displacing the spleen towards the centre of the cavity. It was firmly adherent to the lower dorsal and lumbar vertebræ, and to the lower ribs for two or three inches from their vertebral articulations. Large pieces of bone were laid bare, and many exfoliations were separated from the vertebræ, and were so firmly united to the growth by ligamentous bands, as to be torn away with difficulty.

Dr W. T. Gairdner gave the following account of the tumour, which was exhibited to the Society. "It was attached to the upper part of the kidney, three-fourths of the substance of which was sound. The upper margin of the kidney was altered in form, flattened, and separated by a thick band of cellular tissue from the main mass of the tumour, which occupied the situation of the supra-renal capsule. Two or three rounded masses of morbid matter, similar to the tumour, lay between the infundibula, among the cellular and fatty tissue

exterior to the pelvis. Pelvis, ureter, veins, and arteries were all sound, and I presume these morbid masses were parts of the lymphatic system. The tumour consisted, for the most part, of matter of a tolerably firm consistence, and of a yellowish-grey colour, tinged very deeply at the upper part with blood, which was apparently extravasated. In its general arrangement, the yellowish matter bore considerable resemblance to that which is found in the normal supra-renal capsule of the adult, except that there was no distinct cavity, and the central yellow matter was enormously increased in bulk. On examining a portion of this matter with the microscope, I found cells, fibres, and a large quantity of granular matter ; but none of these elements were in any way characteristic ; and, indeed, the cell-structure seemed to constitute a small part of the tumour.

"It is difficult to form a positive opinion as to the malignant or non-malignant character of this tumour. It may be a mere hypertrophy with fatty degeneration of the supra-renal capsule, or it may be a cancerous infiltration of it. In the former case, it may be an exaggeration of the fœtal condition, though in such a case it would be difficult to explain why one gland only was thus affected. I may also state, that from an examination with low powers, made after the parts had been placed in spirits, I have not been able to find any of the tubular arrangement so readily seen in the cortical substance of the supra-renal capsule. From this and other circumstances, I am disposed to consider the tumour cancerous,—a view which is also supported by the presence of nodules in the lympathic system of the kidney."

<div align="center">HEMORRHAGIC MEMBRANE WITHIN THE ARACHNOID.</div>

Dr W. T. Gairdner exhibited preparations illustrating the morbid appearances found in a case of a melancholic patient in the Edinburgh Asylum, who had been insane for several months before death. On removing the skull-cap, the outer surface of the dura matter was quite normal ; but its inner surface was coated with a thin membrane, composed of fibrine, mostly of a yellowish-white or very pale rust colour, and involving here and there small irregular-shaped portions of purple coloured fibrine, in all respects similar to clots of blood. This membrane was thickest in the neighbourhood of the falx cerebri, where it was reflected from the dura mater over the cerebral arachnoid, and had a thickness of about two lines. It was readily traced upon both sides of the falx, passing to left and right, one portion covering the arachnoid of the dura mater, the other the cerebral arachnoid over the whole of the superior, anterior, and posterior convolutions of both hemispheres. At the lower lateral parts of the brain it became very much attenuated, being lost altogether at the base of the brain. Although closely adherent to the arachnoid membrane, it could be stripped off readily enough, leaving the surface nearly as smooth as in the natural condition, and with no trace of unusual vascularity. The free surface of the membrane was also apparently smooth and glistening, like that of serous tissue. The microscopic structure of the membrane was that of decolorised fibrine, with some indefinite nuclei, and some granular matter. There were no distinct appearances of vessels, or of fibrous tissue, other than the filaments which are found in all fibrine.

Dr G. adverted to the observations of various authors, and particularly to the elaborate papers of Mr Prescott Hewett, in the "Medico-Chirurgical Transactions," vol. xxviii. ; and the preparations by the same gentleman in St George's Hospital Museum, as proving the origin of such membranes from extravasation of blood. He said that inflammatory effusion *within* the cavity of the arachnoid was a very rare occurrence, except as the direct result of injuries or operations involving the cranial bones and dura mater. In all ordinary cases of meningitis, the lymph was effused among the vessels of the pia mater, and beneath the cerebral arachnoid, being therefore *external* to the arachnoid cavity.

Dr Bennett quite agreed with the view of the nature of the case which Dr W. T. Gairdner had propounded. He had himself seen appearances somewhat similar in a dissection conducted at Berlin by Romberg.

MEETING VIII.—WEDNESDAY, *6th March* 1850.—Dr BEGBIE, Vice-President, in the Chair.

Professor Miller read an account of a case of Inguinal Aneurism, which will be found among the Original Communications, page 318.

HEMORRHAGE FROM A UTERINE POLYPUS.

Dr Patrick Brown, of Whitchurch, Salop, detailed a case, in which the passage of a uterine polypus had caused extreme hemorrhage. The patient, a poor woman, residing about three miles from Whitchurch, had been for some time in bad health, had observed some bloody discharge from the vagina for a few days, and finally, on the day when Dr B. was sent for, the hemorrhage had become so profuse, that on his arrival he found her anemic and almost pulseless, her extremities cold, and her face bedewed with cold clammy sweat. She was still sensible, and could articulate in a feeble whisper. The bed was saturated with blood. The woman had suffered from pains resembling those of labour, and believed that she was about to miscarry. On making an examination *per vaginam,* the os and cervix uteri were found dilated with a round firm substance, of the size of a pullet's egg. Its uterine attachment could not be reached with the finger; but by twisting the whole mass round and round, Dr B. succeeded in bringing it away. It proved to be a pear-shaped fibrous polypus, which had been suspended by a narrow pedicle. The patient's abdomen was now tightly bound with a shawl, the vagina was plugged with some wet rags, warm bricks were applied to the extremities, and stimulants freely administered. The patient soon rallied, and ultimately recovered, although for years she continued to present a most ghastly appearance. The author concluded his communication, by expressing his sense of the practical value of Dr Simpson's recent essay on uterine polypi ; and by lamenting that mistaken feelings of delicacy on the part of patients and their friends, often prevented the general practitioner in England from instituting a vaginal examination,—the only mode by which the true character of any disease of the internal female organs can be ascertained.

Dr Simpson believed that the false delicacy to which Dr Brown had alluded was in some degree attributable to the questions which medical attendants often put,—*e. g.,* asking the consent of their patient before proceeding to examine the vagina. Here the examination was never prefaced with such questions.

Some conversation followed between Dr J. Gairdner, Dr Simpson, Dr Moir, Dr Begbie, and Dr Skae, regarding the amount of blood which could be abstracted without inducing death. The smallest loss of blood which was known to have proved fatal was seventeen ounces,—the amount lost by the Princess Charlotte. The amount of hemorrhage which could be borne by healthy women, not exhausted by labour or previous illness, could not be estimated.

Dr W. T. Gairdner having inquired whether Dr Simpson could throw any light upon the source of hemorrhage in cases of uterine polypi ? Dr S. replied, that in certain cases of profuse hemorrhage lasting for months, which had fallen under his own observation, he believed that the blood proceeded, not from any laceration, but from the mucous surface of the tumour. If, as some authors asserted, the bleeding took place from the mucous surface of the uterus, why should hemorrhage cease when the polypus was tied ?

ON A PECULIAR DISEASE OF THE NASAL FOSSA.

Dr John Gairdner read the following communication :—

The diseases of medical men are of special interest to the profession, on this account, that they are closely observed by those who are *capable* observers of pathological phenomena ; and, as the author of a celebrated treatise on the culinary art is said to have proved his precepts by fairly eating through all the dishes recommended in his volume, so a physician, whose fortune it should

be to encounter the scarcely more dangerous, though far less agreeable, ordeal of tasting all the various *curable* ills that flesh is heir to, would possess high advantages for writing an instructive work on the history, diagnosis, and treatment of diseases. I venture to think that the following case, which is that of a medical gentleman, may possess some interest, not merely on this principle, but as being an example of a somewhat unusual form of disease; which, resulting in a recovery, may serve to guide us to a favourable prognosis in future cases of the same description.

The subject of my narrative was above fifty years of age, when he became affected with a common coryza of no unusual severity. While labouring under `it, he was called to a piece of professional duty at a considerable distance. It was early in May, and he had to travel twelve miles of his journey in an open vehicle, and under a chilly atmosphere,—the last four miles being after sunset. His coryza was thus very sensibly increased, and it became still more trouble-some after his return. A week after the date of his journey he was obliged to take to bed for four days, in consequence of feverishness, headach, and exces-sive coryza; which last symptom was then, for the first time, attended with a most distressing fetor. The fetor proceeded exclusively from the right nos-tril, from which also the discharge chiefly came. The matter was thick and opaque. There was considerable pain in the right superior-maxillary region, and also behind the mastoid process, at a point about one inch below the inser-tion of the right trachelo-mastoid muscle. The discharge, which was at first excessive, gradually diminished, along with the other symptoms, and he was enabled to resume his professional duties in less than a week from the time he took to bed.

Such was the commencement of a disorder, which hung about him, in a subdued form, for several years. After the subsidence of the acute symptoms, his ordinary condition was as follows :—He had,—1. a constant sense of par-tial obstruction of the right nostril, requiring some degree of force to impel air through it ; 2. more than the usual amount of mucous discharge from that nostril ; 3. inability to incline his head forward without causing a necessity for the use of his handkerchief; 4. fetor, not constant, nor even frequent, as it occurred only once or twice a-day, and for a minute or thereabouts at a time ; rarely perceptible by others; always accompanied, when it did occur, by a sensation of the escape of some fluid into the affected nostril ; and usually followed by the discharge of a pellet of matter, which was thicker and yellower than the ordinary mucus of the nostril ; 5. pain in the region of the right superior maxillary bone ; it was a dull pain, not constant, but seldom absent for above a day, or two days at most. 6. To these things I must add, that the discharges from the two nostrils, microscopically examined, presented very different characters—that of the right nostril containing pus globules, while that of the left exhibited no characters at all different from those of the healthy secretion of the Schneiderian membrane. All these symptoms, and especially the fetor, were immediately and greatly increased by every inflammatory cold which affected the nasal fossa.

After the lapse of seven years and a half from the first invasion of this dis-agreeable disorder, he was lately seized with a catarrhal affection, accompanied by coryza, fetid discharge from the nostril, and some headach. The attack was in no respect different from many attacks which he had had at various periods for some years before it. But, immediately after its cessation, he remarked with satisfaction that the fetor was gone, and the habitual discharge from the right nostril greatly diminished. The sense of obstruction in the nostril, the stillicidium upon inclining the head forward, and the pain in the maxillary region, had all undergone a great change for the better. The change has been progressive,—and he is now so free from all these symptoms, that his cure may be regarded as nearly complete.

On a retrospect of this case, it appears probable that the exposure in which

it originated had caused the death of a minute portion of bone within the nostril, possibly of a part of the spongy bone, and that the exfoliation of this portion was the cause of the cure. That its escape was not observed by the patient is not against this supposition; as a very inconsiderable fragment would suffice to account for every thing.

It may be right that I should make this history complete, by stating that the patient is of a healthy constitution, that he has not been subject to glandular swellings, or any form of strumous disorder, that he never took mercury except in the form of a purgative of calomel, and *that* not half a dozen times in his life, so far as he can remember; and that he never in his life had any description of venereal disorder.

Two things must be mentioned with regard to his family. One is, that his mother certainly suffered from some analogous affection some years before her death; she did not indeed complain of it, and therefore he cannot supply any minute information about it; but her handkerchief gave sufficient evidence of more than usual discharge from the nostrils, and of its being thick, and, as he thinks, somewhat fetid.

The other fact alluded to is of more interest. His brother, who is also of the medical profession, experienced a similar attack in his own person. In him the complaint did not supervene suddenly, but was the result of repeated and neglected colds. For forty years of his life he scarcely ever required the use of a pocket-handkerchief. For two years he used two every day; and, when dry, they were always glued together in the manner that is caused by a discharge from an excited mucous surface. The discharge was manifestly fetid at times, though not constantly. This was not felt by himself, for the sense of smelling was then, and still continues to be, much blunted. After two years, during which time the discharge had flowed pretty copiously, and at times so freely as to be a very great inconvenience, a gradual abatement was observed; and, about this period, he was aware of some traces of osseous matter. The right nostril was much more affected than the left, but his pain was confined to the region of the frontal sinuses, and was dull, not acute. He has still a constant moisture of the right nostril, which becomes copious, not with colds only, but with any disturbance of health, and has occasional fetor. He thinks the sense of smelling is returning. He still uses a handkerchief every day; but he remarks, that when it is dry, it is not now, as it formerly used to be, hard and stiff as a board. It is, therefore, evident that a great change has taken place, indicating a diminution of fibrinous exudation, and an approximation to a cure of his disease.

Under the title ozœna, in a variety of systematic works, will be found descriptions of a form of disease similar to the above, which are usually accompanied by an unfavourable opinion with regard to the chance of its removal. The prognostic, I have no doubt, is well founded in many instances. But I am inclined to think that where, as in the cases just related, there is neither cancer, nor struma, nor syphilis, nor mercurial erethism to contend with, the case will generally end in a cure. It is probable that such cases are seldom watched from beginning to end by those who have described them, and that they have therefore sometimes been erroneously judged incurable merely on account of their tediousness.

Dr Simpson had met with cases somewhat similar, in which, after sneezing, the patients expelled casts of the nostril. He had not thought of diseased bone as the cause, but one of his patients had necrosis of the lower jaw. Dr Robert Hamilton, Dr Begbie, Dr Wright, and Dr Kerr likewise stated the results of their experience in ozœna, and other diseases of the nasal cavity.

INFLAMMATORY ERUPTIONS UPON THE MUCOUS MEMBRANE OF THE CERVIX
UTERI. BY PROFESSOR SIMPSON.

The common forms and effects of inflammation of the cervix uteri, viz. ulceration, hypertrophy, and induration of the cervix, were now well known

to the profession. But the surface of the cervix was liable to other types of inflammation of an eruptive character, which apparently had hitherto been little, or not at all, studied by obstetricians ; and were not yet described in works upon the pathology of uterine diseases. Among these special inflammations of the cervix uteri and top of the vagina, Dr Simpson had observed eruptions referable to the vesicular, pustular, tubercular, papular, and erythematic orders of the classification of Willan and Bateman. *Herpes (herpes uterinus)* he had seen following the usual course of *herpes labialis* in two or three instances, in patients who had months previously been under treatment for common ulceration of the cervix ; and Dr S. suggested that perhaps this and other eruptions were occasionally the origin and basis of the common variety of granular cervical ulcer. *Acne*, in the form of chronic, hard tubercles and pustules, was by no means uncommon, and often co-existed with common ulceration. A papular form of eruption sometimes supervened in chronic cases of uterine disease, and was usually diffused over both the cervix uteri and interior of the vagina ; sometimes having the characters of *Lichen ;* in other instances presenting the appearances and severe itching symptoms of *Prurigo*. Eczema and patches of *Apthæ* also occurred. The treatment required to be varied according to the nature and character of the eruption, and consisted of the application of nitrate of silver, of medicated washes, and medicated pessaries, &c. In severe and distressing cases of prurigo of the cervix, vagina, and vulva, brushing the affected surface often with hydrocyanic acid (the strength of that of the Edinburgh Pharmacopœia), was mentioned as often giving the greatest relief.

Dr Pattison mentioned a case of prurigo of the vulva, which Dr Simpson had seen with him, and where the hydrocyanic acid had at once afforded perfect relief.

EDINBURGH OBSTETRICAL SOCIETY.

SESSION IX.

MEETING III.—*February* 13, 1850.—Dr SIMPSON, President, in the Chair.

CASES OF TETANUS COMING ON AFTER ABORTION. BY DR A. WOOD AND DR MALCOLM.

Mrs C., aged about 36,—stout make—florid complexion—after menstruation had been obstructed for three months, was seized, on the 16th November 1845, about three A.M., with copious coloured discharge from the vagina without pain. When seen at seven A.M., countenance pale; pulse quick and weak; discharge abundant, and mixed with coagula ; uterus enlarged; os uteri flattened, and slightly open. The vagina was plugged, and sugar of lead and opium were given. The plug was removed in two hours by the nurse, on account of the uneasiness which it caused. On the 17th, the discharge, which had been abundant all yesterday, increased to-day, and was accompanied with large quantities of coagula; os uteri sufficiently open to admit the finger; the uterus seems full of coagulated blood. Under treatment the discharge abated, and in a few days she was so far recovered that Dr Wood took leave of her. On November 23d, he received a hurried message to see Mrs C. in the evening, but being detained with a bad case of labour, did not see her until November 24th, at seven A.M. He found that the bowels had not been open since the 25th; had been complaining all day of stiffness of the jaws and sore throat, for which Dr James Simpson, the family medical attendant, who had seen her in his absence, had prescribed fomentations of camomile flowers. The stiffness of the jaws was considerable, and they were opened with such difficulty, that it was impossible to see the throat ; pulse 80, soft, and compressible. In the forenoon the bowels were freely opened by a turpentine enema; the stiffness of the jaws had, however, increased ; acute pain in the spine was complained of ; the abdominal muscles were stiff, and swallowing difficult. A sedative draught was

now administered. On again visiting her in the evening, Dr W. found that no relief had been obtained from the draught. She had had a tetanic spasm at six P.M.; and while visiting at seven P.M., a second occurred. She could no longer swallow. Professor Syme was now consulted. Injections with tobacco, Indian hemp, and opium were prescribed, but the convulsions continued to increase in frequency, and she died at ten A.M. on the 26th.

In Dr Malcolm's patient, tetanus supervened upon a severe attack of cynanche tonsillaris, with which the lady was seized upwards of a fortnight after she had suffered from abortion at a very early period of pregnancy, and from which she had satisfactorily recovered. When Dr Malcolm was first called to see this lady, she was suffering from inflammation and ulceration of the cervix, but had not the least suspicion of being in the family way. The treatment of this state of the uterus was commenced in the usual manner. In a few days, however, she was taken with the symptoms of abortion, which speedily followed. In the course of about a fortnight, she had recovered so far that the usual daily visit was discontinued. About this time, having taken some liberty with herself, she caught cold. The cynanche tonsillaris was severe; and on the second day it was accompanied, as often happens, with inability to move the jaw. On the third day, the symptoms were all very much aggravated, but presented no peculiarity. On the fourth day, she still continued very feverish and ill, and about noon she was seized, for the first time, with general tetanic spasms. She was seen in this fit by several physicians in the absence of Dr M. When Dr M. called the fit had ceased. After two hours the tetanic spasms returned with increased violence, and did not cease till she died in the course of a few minutes.

Dr Simpson observed, that he had seen a patient die of tetanus after a uterine lesion, but not after abortion. In the case he referred to, and which Professor Syme saw with him, a very large soft cellular polypus was detached and thrown off by the spontaneous efforts of the uterus. A few days subsequently the patient had difficulty in opening her mouth. She died in the course of about fifty hours, with all the symptoms of general tetanus. In some of the Registrar-General's Reports on the Causes of Death in England, two cases of death from tetanus after child-birth are noticed.

Dr Duncan stated, that in the number of the " Monthly Journal of Medical Science" for December last, there was contained an abstract of a paper by M. Pitre-Aubinais on puerperal tetanus after child-birth. It deserved the attention of the Society.

CASE OF ACCUMULATED AND RETAINED MENSTRUAL SECRETION.
BY PROFESSOR SIMPSON.

Dr Simpson exhibited to the Society a very large quantity of a thick viscid fluid, of a dark red colour, which had been removed that day by Mr Syme from a young woman in the Royal Infirmary.

The girl was nineteen years of age, had never menstruated in the usual way, and made great complaints of severe pains in the back and loins, which were much exacerbated every three or four weeks. About five months ago she was for the first time sensible of a swelling in the hypogastrium about the size of the fist. Since then it had gradually increased, but chiefly at the periods of the monthly exacerbations. On examination, the hymen was found perfect and entire, and the vagina and uterus greatly dilated, by the accumulated menstrual secretion. The hymen was divided by Mr Syme, and the fluid exhibited was evacuated.

Dr Simpson stated that the same operation had been performed by him in the Maternity Hospital, in a case where the cause of occlusion was adhesion and contraction of the vagina from sloughing, following a previous difficult labour. The quantity of fluid evacuated was almost as great. This patient, like many others who underwent this apparently simple operation, had suffered

under a smart attack of irritative fever after it.   Dr Ramsbotham had collected five or six cases, in which this irritative fever had gone on to a fatal termination.

Dr Keiller mentioned a case operated on by Dr Webster of Dundee, in which the collection of fluid was even greater than in the case operated on by Mr Syme.

NEW FORM OF OBSTRUCTION IN HEAD PRESENTATIONS FROM POSTERIOR DISPLACE-
MENT OF THE ARM.   BY PROFESSOR SIMPSON.

Dr Simpson stated that he considered the case to which he wished to direct the attention of the Society an important one, because the peculiar obstruction in head presentations, which it illustrated, was, so far as he knew, hitherto undescribed.   The form of obstruction consisted in one of the arms of the infant being displaced backwards across the neck or occipital region ; or more properly speaking, it was the forearm that was thus thrown across the back of the head and neck, the arm being thrown upwards in a line with the body, in order to admit of this malposition of the forearm.   In this abnormal position the displaced elbow and forearm of the child, first increased greatly the dimensions of the basis of the head ; and secondly, these same parts formed a kind of projecting obstruction, which readily hitched and caught upon the brim of the pelvis, thus preventing the descent of the head.   But the effects might be better judged of by detailing the case itself.

The patient had previously borne nine children.   All the labours had been easy, and she had frequently been delivered so speedily, that the labour was over before the medical attendant could reach the house.   In her last and tenth labour, pains came on about four in the afternoon, and the os uteri was not completely opened up till about ten o'clock.   About an hour before, the membranes ruptured.   At six next morning, Dr S. received a note from her medical attendant, Mr Carmichael, asking him to see her, as the head had remained in the same position at the brim for several hours, the uterine contractions were becoming weak, and the woman herself exhausted.   On placing the patient deeply under the influence of chloroform, in order to make a complete examination, Dr S. found the maternal passages perfectly relaxed and open, and the head of the child to be by no means large, and not even entirely filling up the brim.   The vertex presented, and the face was directed towards the left sacro-iliac synchondrosis,—a rare enough position, but one not in any degree calculated to account for the delay. On passing the examining fingers farther upwards, in order to trace any possible obstruction, Dr S. touched a projecting body (the elbow) beyond the left ear of the child ; and on now making the examination more carefully, he traced this body backwards across the neck of the infant, and found it to consist of the left forearm of the child thrown back posteriorly behind the head.   Dr S. then brought the hand downwards and forwards, believing that if it were converted into a head and arm presentation, the case might terminate without further interference.   During the next half hour, however, the pains, which had for some time been weak, had little effect in forwarding the presenting parts, and as the child's heart had now sunk as low as 78 beats in the minute, Dr S., in order to preserve the child, again chloroformed the patient deeply, and delivered the child by podalic turning.   The mother made a speedy recovery.   The child soon cried strongly, and goes on quite well.   Its left arm was for a day or two

after delivery easily thrown into the position described. The occipito-frontal circumference of the head was afterwards measured by Mr Carmichael, and found to be 14¼ inches; when the arm was placed in its anomalous position, the same circumference measured 15½ inches. The circumference of the shoulders was 13½ inches. The child was of about the usual size, and weighed 7¼ lbs.

The *Treatment* of such a cause of obstruction, when it was once recognised, should probably consist of bringing the hand downward and forward over the side of the head, so as to convert the case into one of simple presentation of the head and arm. Perhaps it might occasionally be possible to push the elbow forwards in the direction of the lower end of the sternum, and thus draw back the displaced arm into its normal position in front of the chest. If either of these measures proved impossible, or failed, then the podalic version would be required.

The *Diagnosis* of the case was the most difficult point in its management. And in this, as in other complications—as detention from intra-uterine hydrocephalus, &c.—the assistance of anæsthetics in midwifery was invaluable as a means of enabling the accoucheur to make a far more effective, and searching, and successful manual examination and diagnosis, in cases of obstructed labours, than it was possible to do when the patient was awake and incapable of bearing with steadiness, and without unnecessary suffering, the introduction of the hand for the purpose.

When a labour, as in the preceding case, notwithstanding steady and continued uterine contractions, becomes morbidly prolonged in a mother who had previously borne easily a large family, there was every probability of obstruction of some kind on the part of the infant. Dr S. had seen two such cases, where the detention was the result of intra-uterine hydrocephalus. In the present instance it was the result of the malposition of the hand. Some time since he had mentioned to the Society two cases of tedious labour, which, several years ago, he had seen with Dr Ziegler : in both, the head, despite of strong pains, remained in the pelvic brim without descending; in both the head was evidently not disproportionately large to the maternal passages ; in both some point of the shoulder or arm could be touched by the finger on examination ; and, perhaps, if the examination could have been made more complete by the use of ether or chloroform, which were then unknown, a malposition of the arm, similar to the one above described, might have been detected. Various cases are recorded of obstructed labours, with the head, as usual, presenting, in mothers who had previously had natural deliveries, and where the forceps failed to extract the child, and where even extraction after craniotomy was difficult. Some of these cases were in all probability instances of obstruction from dorsal malposition of the arm, or rather of the forearm. The late Dr Campbell, shortly before his death, told Dr S. of a case where there was no pelvic or other deformity on the part of the mother, no want of uterine contraction, and no disproportionate size of the head of the child, and yet he and others had entirely failed in extracting the detained infant by the forceps, and at last were obliged to open its head.

When looked for, Dr S. believed, therefore, that the dorsal malposition of the forearm would be found a more frequent cause of obstructed labour than the total silence of obstetric authors on the subject might, *a priori*, lead us to suppose. Further, he considered the present case as interesting, not only as an instance of an undescribed species of malposition and obstruction, but probably as one of a new *class* of malpositions as yet unrecognised in any of our accounts of the mechanism of labour, and the malpositions of the child. It would probably be found that other degrees and forms of malposition of the arm might occasionally lead to the same result.

Dr Cumming said that he had a distinct recollection of the case mentioned to Dr Simpson by Dr Campbell. The late Mr John Kennedy had been in attendance on the patient during the greater part of the night. The labour had advanced regularly and naturally till the os uteri was of tolerable width, and

the vertex had descended some way into the pelvis, then, though the pains continued sufficiently powerful, though the head of the child was quite moveable, and the soft parts of the woman were perfectly relaxed, no further advance was made. About mid-day Mr K. sent for Dr Cumming, expressing himself unable to account for the arrest of the labour. On examination, Dr C. found matters exactly as they had been described, and was at first disposed to account for the retardation by the hand being tilted up under the chin ; but on further consideration abandoned this idea, as in all the cases he had seen of delay from this cause, the head had descended deeper into the pelvis than in this case. Mr K. and Dr C. waited on for several hours, during which various efforts were made to ascertain the cause of arrest ; but as these were unavailing, as the pains were becoming more inefficient, and tenderness of the abdomen was threatening, they resolved to apply the forceps. The instruments were accordingly applied without difficulty, and Mr K. used all the exertion he thought justifiable, but without the slightest effect. Dr C. then made similar exertions equally fruitless. After a time Mr K. resumed, and Dr C. again followed him, but with the same result. At this stage they deliberated as to their next course of procedure. The head had not advanced in the slightest degree in spite of all their traction ; it was still quite unimpacted and moveable. There was no discoverable contraction of any of the dimensions of the pelvis. It was the third or fourth pregnancy, and in her previous labours the patient had had nothing uncommon, certainly nothing instrumental. What *could* be the cause of arrest ? They confessed themselves fairly baffled, and sent for Dr Campbell, who lived in the neighbourhood, and who, with his usual kindness and promptitude, was soon at the bed-side. On his first examination, he was inclined to think that his less experienced friends had been premature in their resort to the instruments, and hinted disapprobation. Operations were therefore suspended till he should see the effect of the pains. He was soon satisfied that, for the woman's sake, if not for the child's, the use of the forceps was advisable. They were applied, and he pulled at first with great caution and forbearance, but with the same result as his friends. To shorten the details, the three doctors pulled in succession with all the force they thought justifiable, but without effecting the slightest advance. The state of the woman now indicated that no further delay should take place. Dr Campbell accordingly used the crotchet, and the delivery was soon accomplished. Dr Cumming has no distinct remembrance of what occurred after the extraction of the head, nor is he aware that there was any mark about any portion of the child to indicate the cause of detention. In subsequent conversation, it was confessed that to all the three doctors it was a mystery; but Dr Cumming said that he could well believe it to have been such a case as that so distinctly and satisfactorily made out by Dr Simpson. Had the chloroform then been in use, the examination might, and probably would, have been made with more boldness, freedom, and success.

Dr *Simpson* observed, that sometimes, in women who had previously borne a large family, a cause of obstruction might exist in a late labour, not on the part of the child, as was generally the fact, but on the part of the uterus. Last summer he saw, with Dr Skae, a case of this kind, where the source of detention was a firm and contracted circular band of the uterus around the site of the neck of the child.

LINGERING LABOUR FROM A STRICTURE OF THE UTERINE PARIETES AROUND THE CHILD'S NECK.

Dr *Skae* stated that accidental stricture of the uterus during labour, and especially before the separation of the placenta, as a consequence of irregular or spasmodic contraction of its walls, was an occurrence by no means unfrequently met with ; but the following case of uterine stricture was one of quite a different character. The contraction was of a permanent kind, and probably had been developed in the course of utero-gestation, offering an insuperable barrier to the progress of labour, so far as the effects of antispasmodic

treatment could be brought to bear on it. Its relation, indeed, to accidental stricture is so similar to that between accidental and unavoidable hemorrhage as to warrant its being called unavoidable stricture. The patient in whom it occurred complained of a feeling of tightness across the lower part of the abdomen during the three last months of gestation, and had a strong impression on her mind that all was not right with her, for she had on no former occasion experienced the same feeling, although she had had a large family, and once or twice twins. The particulars were as follows :—

Dr S. was sent for by Mrs C. on the morning of Tuesday, the 12th of June last,¦as she thought herself in labour. Examination discovered no indication of incipient parturition, and an opiate, followed by castor oil, was prescribed, on the supposition that the pains, which were said to have been steady and severe for some hours, were of the ordinary character of the spurious pains which so frequently precede labour. Notwithstanding repeated opiates, however, the pains abated but little during the subsequent forty-eight hours, when dilatation of the os uteri began to show itself. During the whole of Thursday the 14th, labour progressed favourably, so far as dilatation of the os was concerned ; but it was only about four or five o'clock that the presentation could be distinctly made out, when the head could be found to descend to the brim during the pains. The patient continued suffering, apparently from severe labour pains, with but little change in the position of the fœtal head till past midnight. The head descended, during the pains, to the brim of the pelvis, but never entered it, although an attempt was repeatedly made to steady it in its most favourable position for descent. Œdema of the os uteri now showed itself, and the strength of the patient began to flag. Dr S. therefore made two or three attempts to bring her under the influence of chloroform, but unsuccessfully, for she resisted with all her strength, being firmly determined not to take it ; and his only assistant was an elderly female, who was worse than useless from alarm and agitation. By this time he felt satisfied that the obstruction to labour must be of some unusual kind, for the pelvis was large and well formed, and the size, firmness, and configuration of the child's head opposed the idea of hydrocephalus. He therefore sent for Dr Simpson, at two A.M., and they succeeded in speedily putting her under a full dose of chloroform, when the cause of obstruction was found to depend on the presence of a rigid stricture, situated in the lower third of the uterus, upon which rested the shoulders of the fœtus. After administering 120 drops of Sol. Mur. Morphia, and keeping her pretty deeply under the influence of chloroform for two hours, it was found that no material relaxation of the stricture had taken place, to admit of turning without endangering the integrity of the uterine walls. It was feared that evisceration might be ultimately necessary, but employment of the long forceps was resolved upon, notwithstanding the unusual difficulty of applying them so high up, as necessarily to require their being locked within the vagina. Dr Simpson, however, with his accustomed tact and dexterity, succeeded not only in applying them, but also in accomplishing delivery in some fifteen or twenty minutes, by dragging the shoulders of the fœtus through the stricture. In this case both mother and child did well, the recovery being unattended by any unfavourable symptoms.

[The remainder of the report of Meeting III. will be given in our next.]

THE LATE DR JOHN REID.

Professor BENNETT, on concluding his description of the functions of the eighth pair of nerves, addressed the class of the institutes of medicine as follows :—

GENTLEMEN,—As in the case of Sir Charles Bell with the fifth nerve, so with Dr John Reid and the eighth nerve, it is only by contrasting the confusion that existed before, with the positive knowledge which resulted *from* his researches, that we can form a just idea of their importance. During the course, I have had

many occasions to mention the name of Dr Reid, but I seize on the present one as perhaps the most appropriate which has occurred to me since his death, for saying a few words with regard to his labours and scientific merits.

Dr Reid possessed a singularly penetrative and sagacious mind, which he brought to bear with the most advantageous results on all the various subjects which engaged it.   As a physiologist, he may be considered to have been unsurpassed, not, indeed, because it has fallen to his lot to make those great discoveries, or wide generalisations which constitute epochs in the history of the science, but because he possessed such a rare degree of caution and conscientiousness in all his researches, that no kind of investigation, whether literary, anatomical, physiological, or pathological, that could illustrate any particular fact, did he ever allow to be neglected.   In pursuing his own inquiries, also, he was ever most careful to do every possible justice to preceding and contemporary writers, whilst the modest manner in which they were brought forward, although in opposition to those of men of established reputation, so far from irritating their self-love, almost always led to a friendship between them.   The various public positions he held as a teacher presented him with admirable opportunities for becoming thoroughly acquainted with the different facts in anatomy, physiology, and pathology, and it was from the study of these sciences, in union with each other, that he derived the great reputation which he latterly possessed.

I first knew him in 1833, at which time he was demonstrator to Dr Knox, who had then one of the largest anatomical classes ever formed in this country. It was Reid's habit to remain in the dissecting room daily, from nine in the morning till four in the afternoon.   At one o'clock he gave a demonstration at one of the tables on some dissection that happened to be made by a student. We used to crowd round him, and ask questions on any point that was not thoroughly understood ; but this was very seldom necessary, for such was the order, clearness, and minuteness of his description, that the subject was indeed made easy to the dullest comprehension.   That kind of instruction also which, with him, as with every great anatomist of this country, sought for illustration in those points bearing on surgical or medical practice, was never lost sight of; and I for one, up to this hour, and I firmly believe, on this account, have never forgotten his admirable demonstrations on the anatomy of the neck, axilla, groin, and other regions of the body.   Such was the commencement of Reid's career, and the means by which he obtained that thorough knowledge of anatomy which was so important in his future proceedings. About this time he published several anatomical papers ; one on the Injections of the Vessels of the Fœtus, to show some of the peculiarities of its Circulation; another on the Structure of the Mesenteric Glands in the Balænoptera Rostrata ; Observations on Phlebolites, and some others.

We next view him as a lecturer on physiology, he having succeeded Dr Fletcher in the extra-academical school of this city in that capacity.   His lectures were compiled with infinite care, and he introduced into them, for the first time in Edinburgh, numerous experiments on living animals.   Even in his hands, however, such illustrations did not prove attractive, and gradually he ceased to perform them.   But it was as a teacher of physiology that he was naturally led to consider a variety of obscure subjects, and among the rest the extraordinary confusion that existed as to the functions of the three divisions of the eighth pair of nerves.   He determined on carefully investigating their function experimentally, and having first made himself master of all that was known in connection with it, he planned and executed a series of experiments which, for ingenuity, dexterity of performance, exact description, and the cautious and accurate deductions he made from them, have never been surpassed in this or any other country.   Such as we have seen are the multiplicity of branches and anastomoses connected with the eighth pair, that in endeavouring to irritate and cut across one branch, the others are extremely liable

to be injured. In every case, therefore, having recorded the phenomena observed, he took care, after the death of the animal, to make a careful dissection of the parts, in order to satisfy himself and others that the nerves operated on were really what he supposed them to be. During this laborious inquiry, which extended over a period of two years, he performed upwards of one hundred experiments, and numerous dissections, and the whole were so well planned, so carefully performed, and so judiciously considered, that in no one of his inferences has he ever been proved to be incorrect. His experiments have been repeated by many of the most able and dexterous anatomists and physiologists of Europe, all of whose inquiries have only served to confirm his results. On one occasion, indeed, a discrepancy arose between Reid's observations on the vagus and those of Longet ; for the latter physiologist says, that by irritating the root of this nerve no movements can be produced in the muscles of the larynx or of the pharynx ; whereas, Reid states that such irritation does cause movements. The circumstance, however, that a white cord passes over the superior ganglion of the nerve, as shown by Mr Spence, which afterwards joins the spinal accessory, renders it almost certain that motor filaments are associated with those forming the root of the vagus. It is therefore more probable that Longet was in error (perhaps from the sensibility of the nerve being exhausted in the animals he experimented on), when he says that the vagus is a purely sensitive, and the accessory a purely motor nerve ; and that the nerves furnishing the laryngeal and pharyngeal muscles are derived from the latter.

You must not imagine, however, that this was the only contribution Reid made to physiology, although certainly it was the principal one. His papers " On the Relation between Muscular Contractility and the Nervous System"—" On the Order of Succession in which the Vital Actions are arrested in Asphyxia"—" On the Effects of Venesection in Renewing and Increasing the Heart's Action under Certain Circumstances"—" On the Effects of Lesion of the Trunk of the Ganglionic System of Nerves in the Neck upon the Eyeball and its Appendages," and many others, are all characterised by their great value in elucidating obscure physiological phenomena, by their uncommon clearness and accuracy in the statement of facts, and by the exactness and caution of the deductions they contain. Indeed, every thing he published has a merit peculiarly its own, for it may be said that, although slow to arrive at a decision, whenever he had really made up his mind on any disputed point, you may be pretty well assured that his conclusion was the correct one. During his last illness he busied himself in revising and writing his various papers, which have been published in a separate volume,—a book I cannot too strongly recommend to your perusal, as containing more original matter, and more sound physiology, than will be found in any work that has issued from the British press for many years.

But we have next to consider him as a pathologist, for after having taught anatomy and physiology in the manner described, he was appointed, in 1839, Superintendent and Pathologist to the Royal Infirmary. He now made all the post-mortem examinations in that institution, and carried into his inquiries concerning morbid anatomy and pathology, the same accuracy in observing facts, and the same cautious spirit in drawing inferences from them, that characterised his anatomical and physiological researches. He at once saw the necessity of making his position serviceable to the advancement of medical knowledge ; and struck with the inconsistencies which existed as to the absolute and relative size and weight of the principal organs of the body, he commenced another laborious investigation on this subject. He introduced weighing machines into the pathological theatre, by means of which the weight of the entire body was first ascertained, and then respectively the weights of the different organs. In this way he ascertained the weight of the entire encephalon, of the cerebrum and cerebellum, with and without the pons varolii and medulla oblongata, in 253 subjects. He also weighed the heart, liver, and the two kidneys, in 142 subjects ; and from the whole inquiry he published some most useful tables as to the average weight of these organs. He also published

a valuable paper on " The Pathology of the Continued Fever of Edinburgh," founded on forty-seven post-mortem examinations of individuals who had died of that disease. It was in this communication he made the singular observation, that during the ordinary Edinburgh fever, no intestinal ulcerations occurred, and pointed out the fact, that when such lesion was found, the individual came from a distance.

He published other valuable pathological papers ; but it must be confessed, he regarded pathology more with the eye of a physiologist than of a practitioner ; and histology being then in its infancy, was of very little service to him. But the knowledge he acquired of morbid anatomy, and with the anormal relations of parts, has perhaps never been surpassed.

During the period he was pathologist to the Royal Infirmary, there was introduced under his superintendence that regular method of inscribing the leading facts connected with each case in a register, which has since prevailed; and he it was who compiled the first series of statistical tables published by the managers. He was always very sanguine with regard to the important results which would flow from statistics applied to medical cases ; and although experience has not fulfilled his anticipations, there can be no doubt that under his auspices a more perfect system of registration, and more correct tables, were formed, than had previously existed within any large hospital.

It was in 1841 that he was appointed Chandos Professor of Anatomy in the University of St Andrews. Here there was no medical school, properly so called—no hospital—no subjects for dissection—no bodies to examine. Deprived of the conversation of his former fellow-teachers in medicine, and of the stimulus to inquiry which such conversation tends to produce, it was still necessary for him to find a subject for original inquiry, on which to expend his mental energies. The bay of St Andrews is celebrated for its marine productions, and, seizing on the advantages which lay within his reach, he commenced another phase in his scientific career, and became a naturalist. Having obtained one of Chevalier's best microscopes, he studied histology, and was soon acquainted with the minute structure of animals. He studied the habits and mode of development of the mollusca, crustacea, and fishes in the adjacent seas. He dredged for them off various parts of the coast. He kept many animals in his house for years, and minutely watched their manner of reproduction ; and, at the same time made himself master of all that had been written regarding them in this and other countries. It was not long before he began to add papers of great importance to the science of zoology, among which may be mentioned, "Anatomical and Physiological Observations on Some Zoophytes," " On the Development of the Ova of the Nudibranchiate Mollusca," and " Observations on the Development of the Medusa, and an Account of a New Actinia." One of his latest memoirs was on some remarkable structures found in the " Vagmaer,"—a fish of such rarity that only one specimen of it, and that a very imperfect one, was ever examined in this country, but which he immediately recognised and described.

Thus in all the relations in which Dr Reid stood as a man of science— whether as anatomist, physiologist, pathologist, or zoologist—we observe in him the same habits of cautious inquiry, the same ability and excellence, the same power of extending the boundaries of knowledge, the same sagacity and perception of the true. It is impossible to calculate the splendid results that such a man might have achieved, if, instead of being cut off at the early age of forty, his life had been prolonged. Even as it was, there were few living whose opinions were so much respected, or who interfered with greater effect to expose an error, or to support a truth. As a proof of this, I may mention that when Dr Burrows' work was published, in which it was attempted to be shown that the views of Monro, Kelly, and Abercrombie, respecting the peculiarity of the circulation within the cranium were fallacious, I placed, as the then Editor of the MONTHLY JOURNAL, the book in his hands for review. The result was, as we have seen, such a complete refutation of Dr Burrows' argument, that no an-

swer has been, nor is it likely ever will be, made. Indeed, judging from what Reid had accomplished, and from his thorough knowledge of everything he studied, I think there can be little doubt that he would ultimately have obtained a reputation equal to that of any British anatomist or zoologist.

But not only was the entire life of Reid one of great usefulness to science, but the kind and manner of his death was also destined to be very instructive, and that in two most important points of view.

The advance of pathological histology had naturally turned the attention of medical men to the undoubted fact, that many growths, essentially different in their nature, were commonly confounded together under the term "malignant." Lebert and others had separated certain diseases, consisting of an hypertrophy of the epidermis and epithelium, from cancerous growths, strictly so called, although they had long been called cancer by surgeons. These so-named cancers of the lip, face, and os uteri, however, were known to heal and undergo permanent cures after excision ; but similar sores on the tongue were considered unusually liable to return. It was one of the last that caused the death of Reid ; for all the surgeons whom he consulted, and in whom he placed confidence, united in dissuading him from having recourse to an operation. I cannot, at present, enter into all the details of the case,—suffice it to say that the ulcer in the tongue spread; a lymphatic gland on the right side of the neck became enlarged ; he suffered the most excruciating agony from the ulcer affecting those very nerves, the functions of which his own labours had so greatly tended to elucidate. Though at this time fully prepared for death, he was aware of the epithelial as distinguished from the truly cancerous nature of the disease, and, as a last resource, his old friend, Mr Fergusson, of London, during a visit he paid Edinburgh, in August 1848, excised the portion of the tongue affected.

The wound healed rapidly, he regained his general health from the moment of the operation, the agony he experienced ceased, and he frequently told me, that the operation, were it only to be considered as a palliative, was to him most invaluable. He became very anxious, however, respecting the glands in his neck, and insisted on their removal, which was accomplished as thoroughly as possible by Dr Duncan, on two separate occasions, although their deep-seated connections render it doubtful whether complete extirpation had been accomplished. For a time all went well, but in the early part of the summer of 1849, the edges of the incisions in the neck assumed an unhealthy appearance, the disease spread inwards towards the tongue and oesophagus, and he died in the following July. His case, then, was the first that clearly demonstrated that a local epithelial disease might produce a similar alteration of structure in the lymphatic glands, and prove fatal in the manner of so-called malignant growths. He himself frequently conversed with me on the subject, and suggested that the affection should be denominated epitheloid cancer. It would altogether be out of place to enter at present on the numerous interesting considerations to which this case gives rise in a medical point of view. I need only observe, that it is my intention, with his expressed consent, to publish it at length, as it furnishes a most important series of facts in connection with the subject of morbid growths.

But there is another point of view in which his death may be regarded. I allude to the undaunted courage with which he himself met it as a philosopher, and the resignation with which he bowed to its power as a Christian. Perhaps there were few men better qualified than himself to judge of the danger and necessarily painful nature of a malignant disease in the throat, involving such important nerves ; and nothing could be more unaffectedly sincere than his fortitude, nor more evident than the depth and influence of his religious convictions. I visited him a fortnight before his death ; his neck was covered over with purple, nodulated seams ; he calmly squeezed the cheesy matter from the sinuses which had formed, and conversed about his case as if he were an unconcerned party. He told me that neither then nor at any time since the first operation, did he ever suffer the excruciating

kind of pain that he had done, when the disease was seated in the tongue. He repeatedly thanked me for having strongly advised the operation, and presented me with some of the vertebral cartilage of the Vagmaer, which exhibits a peculiar structure, as a parting present. He enjoined me carefully to examine his body after death, and if I thought it useful, to publish the result, at the same time assuring me that he was fully prepared to die. He strongly pointed out the importance of all persons forming correct views of, and earnestly attending to, religion, lest death might come suddenly, and so deprive them of the advantage, as he expressed it, which had been accorded to him, of preparing for the immortality beyond it.

I have only further to say, that John Reid was entirely free from that petty jealousy and morbid sensitiveness which are too often found united with otherwise strong mental powers. There was no dogmatism, nothing overbearing; but, on the contrary, the greatest indulgence for the errors or inferiority of others, and a ready willingness to oblige and instruct whenever he could be of service. He owed nothing to those external accomplishments and elegancies which attract the regards of society. His refinement was of a deeper character, and depended wholly upon kindness of heart, unswerving rectitude, and an earnest love of truth,—qualities for which his personal friends esteemed him beyond measure, and to which the scientific world is indebted for his admirable and exact labours.

GENTLEMEN,—I am sure you will acquit me from the charge of often entering into prolix details, interesting stories, or unmeaning declamations, foreign from the branch of science it is my duty to teach. Should you think that I have done so on the present occasion you will attribute it partly to my long friendship for the subject of this notice, to whom I was anxious to pay some tribute, however unworthy of him; and partly because his career, his mode of research in science, the respect with which he was regarded by his contemporaries, and the reputation he has left as a physiologist, are eminently entitled to your attention, and to the regards of all those who are actuated by a sincere desire to advance the boundaries of human knowledge.

MEDICAL RELIEF OF THE POOR IN SCOTLAND.

The Fourth Annual Report of the Board of Supervision announces, that the distribution of the first parliamentary grant of L.10,000, in aid of medical relief in Scotland has been completed. Only 438 parishes and combinations have established their claim to participation in the grant, by producing vouchers for the required amount of expenditure from their own funds. The aggregate amount of the sums apportioned to the parishes, which, for the present, have either declined to participate or made no claim, has been apportioned to the parishes which have established their claims, in sums proportioned to their actual vouched medical expenditure on medical relief in the last year.

" Medical relief for the poor, which, before the recent statute came into operation, parochial authorities hardly recognised it as a part of their duty to provide, has continued since 1845 to increase in efficiency; and, with the aid of the parliamentary grant, may now, there is reason to hope, be placed upon a satisfactory footing. The expenditure for this purpose, which in the year ending February 1846 was L.4,055, had, in the year ending May 1848, increased to L.30,339. In this latter sum, however, as we stated in our third report, the cost of nutritious diet and other supplies, not strictly chargeable under the head of medical relief, were in many cases included. The sum returned as expended in the year ending May 1849 is L.33,010, 12s. 11½d., from which all expenditure, not strictly chargeable as medical relief, was, by our directions, excluded. While, therefore, the apparent increase is about L.2,671, the actual increase must be much more considerable, although we have not the means of

ascertaining its precise amount. On the other hand, the charges under this head have been augmented, during the past year, by the measures which a large proportion of the parochial boards adopted in consequence of the prevalence of cholera.

" The sum expended on medical relief last year, L.33,010, is equal to three-pence per head on the population of Scotland in 1841. Of this amount, nine-tenths of a penny per head having been covered by the parliamentary grant, the expenditure from the local funds has been equal to twopence and one-tenth of a penny per head on the population. In 1845 the expenditure was about four-tenths of a penny per head on the same population. Simultaneously with this increase of expenditure, there has been a progressive advancement towards a more systematic and efficient provision of medical relief for the poor, and a manifest desire on the part of a considerable majority of the parochial boards to fulfil their obligations. When it is remembered that only five years ago this description of relief was not provided at all, except in a few parishes, it will be admitted that the parochial boards generally have not been slow to remedy the deficiency ; and although there are still many parishes in which we cannot venture to represent this department of relief as being efficiently provided for, and few parishes in which it is administered with as much regu-larity and method as would be desirable, or as might have been attained with-out additional cost, we cannot doubt, where so much has already been effected in so short a time, that we shall have the ready co-operation of a great ma-jority of the parochial boards in carrying out the rules by which we have endeavoured to give more uniformity and regularity to the system, and to place its administration under such checks as may afford the parochial authorities and the public a reasonable security that the duty is adequately performed."—*Fourth Annual Report of Board of Supervision*, 1849.

TRIAL FOR FRAUDULENTLY OBTAINING A SURGEON'S DIPLOMA.

On Monday, the 11th instant, the melancholy spectacle was presented of two respectable-looking persons arraigned at the bar of the High Court of Justiciary, on the charge of having obtained, by fraud, in the name of one of them, a diploma from the College of Surgeons of Edinburgh. It appeared from the evidence, that one of them, William Duncan, in the year 1844, was practising at Amble, in Northumberland, and that the other, Alexander Cumming, acted as his assistant ; that before that time Duncan had been often twitted with hav-ing no diploma, and that in the end of that year, soon after Cumming's return from a short absence, Duncan began to show about a diploma from the Edin-burgh College of Surgeons. The diploma had been recovered by the autho-rities, and was produced in Court. It was in all respects regular, being granted in the name of William Duncan, and regularly signed, while it bore date the 4th of December 1844. It was, however, proved that Duncan, on that day, had not left the neighbourhood of Amble. It appeared further, from the evidence, that, though Duncan had no diploma up to December 1844, he had certificates of having regularly gone through the course of study required to qualify for the examination by which the diploma is obtained, and that Cum-ming carried these to Edinburgh, and, personating Duncan, was admitted to examination, and, having passed, obtained that diploma in Duncan's name, which was exhibited to the Court. It appeared from the evidence, that the candidate for a diploma from the Edinburgh College, besides exhibiting his certificates, is required to draw up a schedule of his whole course of study, which he authenticates with his signature, and that these schedules are pre-served by the College, being bound up in volumes. Accordingly the schedule of study given in by Cumming, for the purpose of obtaining an examination on the 4th day of December 1844, was produced in the Court, bearing the name of William Duncan, which signature Cumming was charged with forging.

The charge of forgery, we believe, was departed from, but the evidence of fraud was complete.

The trial occupied the Court between six and seven hours, several points of law being argued in the course of it. Among these was an objection to the competency of the Court to try Duncan, who had committed no offence in Scotland. The Court gave no decision on its own competency to try the whole case; but directed Duncan to be acquitted on a technical difficulty in the indictment. Cumming was, however, found guilty, and sentenced to imprisonment for one year.—*Medical Times,* March 16.

MURDER BY A MANIAC.

Mr Wilson, a medical practitioner in the village of Juniper Green, near Edinburgh, and his mother, who resided in the same house with him, were, on the night of Sunday the 17th ultimo, murdered by a lunatic, for whom Mr Wilson was in the habit of prescribing. We spare our readers the details of the mode in which the double murder was perpetrated. Our chief object, in alluding to it, is to impress upon them the fearful responsibility which rests with any party who permits a dangerous lunatic to go at large and unguarded, merely because his mischievous paroxysms are not of frequent occurrence. We trust that the horrible occurrence at Juniper Green will convey a useful lesson.

VARIETIES.

CLINICAL MEDICINE.—The course of Clinical Medicine in the University is likely to receive much benefit from certain arrangements lately made by the Medical Faculty. One of the disused clinical wards is to be opened for the reception of cutaneous diseases, and another for those peculiar to women and children. Professor Simpson has consented to take charge of the latter, and the Faculty has authorised his giving clinical lectures to the students of the University.

HAHNEMANN'S ORGANON.—" Have you ever looked into Homœopathy? Have you ever read Hahnemann's Organon?" said an eminent divine to an equally eminent physician. " No," replied the physician; "And let me ask you in return, if you have read the Mormon Bible?" The gentleman, of course, answered in the negative; and his medical friend said to him very properly, "When you take the trouble to examine Joe Smith's Bible, I will take the trouble to examine Hahnemann's Organon."—*Physician and Patient.*

MEDICAL LITERATURE.—A candidate for a professorship in Paris quoted Morgagni among other great literary names in his thesis, but unfortunately quoted him wrong. This did not escape one of his opponents, who, on attacking it, said that he had attributed to Morgagni an error of which he was innocent, and which he would not have done had he read his works. In reply, it was stated, that he could not read Morgagni, because he did not understand English! " A thousand pardons, Monsieur, if you do not understand English it is altogether different. Let us speak of something else." It is said that the judges would have been more satisfied with this candidate had he only known a little English.—*Gazette des Hôpitaux,* February 19, 1850.

A DEMOCRATIC THESIS.—A student of Medicine in Berlin has lately written a thesis " De Morbo Democratico, nova Insania Formâ," which has caused a great sensation among a certain class of politicians in that city.—*L'Union Médicale,* February 28, 1850.

PRIZE AWARDED FOR ETHERISATION.—Out of the sum (L.2,000 annually) which the bequest of M. Monthyon enables the Academy of Sciences in Paris to dis-

tribute for the encouragement of the medical and natural sciences, there has been voted this year to Dr Jackson and Mr Morton L.100 each, for the discovery of the anæsthetic properties of ether.

LONDON PROFESSIONAL JEALOUSY.—In the " Lancet " for 9th March ultimo, appeared an engraving of Dr Simpson's well-known instrument for supporting a retroverted uterus, which an anonymous correspondent of that journal affected to be unacquainted with, and proposed to call the " Infernal Uterine Machine."

THE LISTON TESTIMONIAL.—The sum subscribed towards this object amounts to L.750, which, being insufficient for the erection of a statue, it has been decided that four busts should be executed—one to be placed in the Royal College of Surgeons, another in University College, London, a third in the Royal Infirmary of Edinburgh, and a fourth to be presented to the family of the deceased.—*Medical Gazette*, March 8, 1850.

ORIGIN OF MEDICAL DEGREES AMONG THE PRACTITIONERS OF ENGLAND.—From a statement of Mr Sheppard, based on the accounts in the London Medical Directory, it would appear that there are 554 persons in London with a medical degree, obtained as follows :—From Edinburgh, 178 ; foreign universities, 93 ; London, 66; St Andrews, 68 ; Cambridge, 41 ; Glasgow, 35 ; Oxford, 25 ; Aberdeen, 30 ; Dublin, 11.   In the provinces the total number is 1091 ; and of these there are obtained from Edinburgh, 533 ; St Andrews, 120; foreign universities, 114 ; Glasgow, 105 ; Aberdeen, 68 ; London, 58 ; Cambridge, 57 ; Dublin, 21 ; Oxford, 15.—*Provincial Journal*, Feb. 5, and Mar. 6, 1850.

PRIVATE TREATMENT OF SKIN AND VENEREAL DISEASES.—It has been determined to set aside a certain number of private rooms at the St Louis and Venereal Hospitals in Paris, for the treatment of individuals who, without being poor, are still unable to be treated satisfactorily at home.   Two francs a-day is to be demanded for the accommodation.—*Bulletin Gen. de Thérapeutique*, February 28, 1850. [A similar arrangment is much required in Edinburgh, as many skin diseases, requiring numerous baths, and that superintendence which can only be properly afforded in well-directed institutions are prevalent in the city.]

VALUE OF SURGERY IN THE NORTH OF ENGLAND.—The following advertisement appeared in the " North British Advertiser " of the 16th ultimo :—" Wanted immediately, in the north of England, an Experienced Surgeon, who can Amputate, and Manage Accidents, &c   Salary L.25 per annum, with Board and Lodging.   No inexperienced *young* man need apply " !

BOOKS RECEIVED.

Transactions of the American Medical Association. Vol. ii. Philadelphia : 1849.

Hastings considered as a Resort for Invalids. By James Mackness, M.D. London : 1850.

Some Account of the Last Yellow Fever Epidemic of British Guiana. By Daniel Blair, M.D , Surgeon-General of British Guiana. Edited by Dr John Davy. 8vo. London : 1850.

The Hunterian Oration for 1850. By Frederick C. Skey, F.R.S. London : Churchill. 1850.

The Principles and Practice of the Water Cure. By Rowland East, Surgeon. London : 1850.

The Cholera ; What has it Taught us? By William J. Cox, M.R.C.S.E., London : 1850.

The Chrono-Thermalist. No. I. London : 1850.

Outlines of Medical Proof. By Thomas Mayo, M.D. London : 1850.

The Accommodation of the Eye to Distances. By William Clay Wallace, M.D. New York : 1850.

Descriptive Catalogue of Works in Science and General Literature. (Published by Taylor, Walton, and Maberly.) London : 1850.

An Appeal to the Public in Behalf of an Hospital for Sick Children. London : 1850.

NOTICES TO CORRESPONDENTS.

Communications have been received from Mr MILL, Kirriemuir ; Dr DYCE, Aberdeen ; and Dr EASTON, Glasgow. Others have been privately acknowledged.
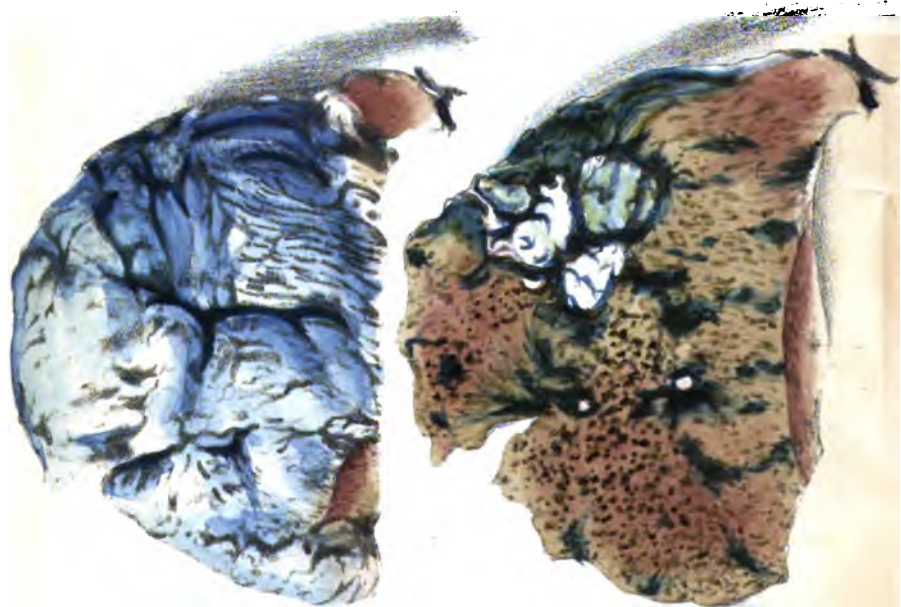
Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On the Treatment of Phthisis Pulmonalis.* By JOHN HUGHES BENNETT, M.D., F.R.S.E., Professor of the Institutes of Medicine and of Clinical Medicine in the University of Edinburgh.—(*Concluded from* p. 239.)

IN my former communication I endeavoured to show, that phthisis pulmonalis originated in a derangement of the digestive organs, which materially interfered with a healthy formation of blood, and the nutrition of the body; that, under such circumstances, exudations of a tubercular character were very liable to be poured into the lungs, which presented a great tendency to disintegrate and produce ulcerations in those organs, and that a rational treatment must be directed, first to an improvement of the nutritive functions, whereby the healthy constitution of the blood may be restored, and secondly, to the adoption of such means as will prevent fresh local exudations, and arrest the ulcerative disposition of such as are already formed. I further pointed out, that the first indication was to be fulfilled by overcoming the dyspepsia, improving the diet, and especially by giving animal oil,—a material essential for the support of the tissues, but which in phthisical cases, owing to the derangement of the alimentary canal, was not assimilated in sufficient quantity.

The good effects of cod-liver oil in this disease are now generally admitted by the profession. It would, however, be very erroneous to imagine that this remedy is of itself sufficient to cure cases of phthisis, or that other means and precautions should be neglected. On the contrary, great management and skill are required during the progress of the disease to meet numerous occasional symptoms, to cause avoidance of those circumstances which are likely to induce exacerbations, and by the alternate employment and suspension of the most useful remedies, to derive from each what may be advantageous to the patient, without pushing it so far as to occasion injurious consequences. It is only by studying individual examples of the disease, and observing the numerous and varied combinations of symptoms and indications that each presents, that the treatment of phthisis, and the difficulties the practitioner has to combat, can in any way be understood. Statistical details, by which the effects of

any plan of treatment are tested, by jumbling together cases essentially different in their nature and progress, so far from assisting the practitioner, or advancing our knowledge, are not only useless at the bedside, but, by causing an idea of certitude, which has no real existence, must ultimately lead to great disappointment.

The following case, which has been under my observation for eight years, will exhibit some of the numerous conditions that present themselves, and the watchful care necessary in order to conduct the disease towards a favourable termination :—

CASE V.—A medical student requested me to examine his chest, in the autumn of 1842. He was tall, thin, and sallow, aged twenty, with frequent cough, accompanied by purulent expectoration. On percussion, there was marked dulness on the right side, beneath the clavicle. On listening in this situation, a loud mucous râle accompanied the inspiratory murmur, and there was loud bronchophony.. On the left side the inspiratory murmur was harsh, the expiratory murmur prolonged, but no increased vocal resonance could be detected, and no dulness on percussion. On interrogation I learnt that his illness had been progressing slowly for at least several months, that he had latterly become much emaciated, that there was considerable perspiration at night, that his appetite had been very capricious, but was now good, and that there had been no diarrhœa. The pulse was quick, the tongue furred, and he complained of slight thirst. I learnt from his friends, however, that his appetite was wretched, and that it was very seldom that he could be brought to eat any animal food whatever. This young man, therefore, had a considerable amount of tubercular exudation in the apex of the right lung, which was softening, and a much slighter amount of it in the apex of the left lung, which was still crude. I prescribed a tablespoonful of cod-liver oil three times a-day, and good diet. I told him to clothe himself well, avoid sudden changes of temperature and exposure to cold, and during the winter months to confine himself to his room, the temperature of which was to be regulated between fifty and sixty degrees.

I saw him occasionally during the winter of 1842-3, during which period it became necessary to suspend the use of the oil every now and then, on account of the nausea it occasioned. His health and strength, however, greatly improved, and the moist râles entirely disappeared, although he continued to expectorate a small quantity of viscous purulent matter. It was with the utmost difficulty he could be confined to his apartment, and it at length became so irksome, that he went out without my knowledge. At first he used considerable caution, and no ill effect arose; but, in May 1843, I was summoned to him in great haste. He had spent the previous evening with some companions, had drunk more than usual, and walked home past midnight, the weather being rather chilly. I found the cheeks flushed, strong febrile symptoms, laborious breathing; and, on ausculation, loud crepitating, passing into mucous, râles were heard over the upper third of right side, with the same dulness on percussion as formerly. I prescribed quietude, with tartar-emetic and opium in large doses, frequently repeated. In a few days the fever had left him, but the moist râles in the right lung continued; the expectoration was again copious, the sweating at night had returned, and there was an unconquerable repugnance to every kind of food. Various means were tried to diminish the irritability of the stomach—effervescing powders, hydrocyanic acid, creosote, various anodynes, stimulants, alkalies, and bitters — but without avail. In June, he was reduced to a condition much worse than when I at first saw him, and was once more greatly emaciated, and so weak that he could not stand five minutes, without enduring great fatigue. I now ventured to prescribe the oil again, in teaspoonful doses, combined with a drop of the oil

of cloves, three times a-day. It was retained on the stomach, and was taken regularly for two weeks, at the end of which period he had greatly improved. After a time, the dose was increased to a tablespoonful twice, and then three times, a-day. In August, all moist râles had again disappeared, and were replaced by a distant blowing murmur, with loud bronchophony. The apex of left lung fortunately had undergone no change since I first examined it. He was now able to walk, his strength having been much restored ; and I informed him of the critical position in which he was, and impressed upon him the necessity of great caution. He seemed thoroughly roused to a sense of his danger, and left Edinburgh to see his friends in the country.

In November 1843, he returned to continue his studies in the University. With the exception of being somewhat stronger, and in better spirits, he was in much the same condition as when I last saw him. The problem now was, how to get him over the ensuing winter. I was in hopes that if, during the next six months, no fresh exudations occurred, and the cavity or cavities in the right lung remained dry, that they might ultimately cicatrize. I, therefore, advised him not to attend classes at all, and make up his mind to remain in his own lodgings, which were to be chosen especially for the purpose, and kept at an equable temperature. Accordingly, when the weather became cold—which, however, was not until January—he remained at home, and although the confinement was exceedingly irksome, he bore it with great resolution. It was about this period I first noticed strong friction or creaking murmurs at the apex of the right lung, which indicated that the pleuræ in that situation were greatly affected.

Matters remained in this condition until February 1844 ; I every day expecting that he would break from his confinement, or commit some imprudence which would induce fresh exudation in the lung. At this time I was sent for late at night, and found him greatly alarmed. In the course of an hour he had spat up about a pint of florid blood, and when I saw him he was coughing violently, and expectorating frothy mucus, deeply tinged of a red colour. I advised him to restrain the cough and efforts at expectoration. I sat with him some time, his excitement gradually diminished, and the cough and hæmoptysis ceased. He told me that for some days he had experienced considerable tightness and a sense of constriction in the upper and right part of his chest. On asking him whether this continued, I ascertained that it had completely disappeared. On auscultation, I heard loud friction râles, like the creaking of leather, over the apex of right lung. The inspiration was accompanied by a hoarse blowing murmur. The expiration prolonged ; and there was the same loud bronchophony. Sounds over left lung the same as formerly. It was evident to me, from this examination, that the cavity was contracting ; that in doing so some blood-vessels had been ruptured, and that much was now to be feared from repeated attacks of hæmoptysis. For a period of four months, indeed, he now had occasional returns of spitting of blood, varying in quantity, but rarely exceeding three ounces in amount, and sometimes only slightly tinging the sputa. He was treated at these times by means of quietude, opiates, and acetate of lead, none of which, however, appeared to me to possess any counteracting effect, as the hæmoptysis was evidently the result of changes in the lung, in connection with the contraction of the tubercular ulcers. He always felt more or less constriction in the chest before any considerable hemorrhage, which was invariably relieved by it. Occasionally, also, he experienced considerable dyspnœa, and an intense longing for fresh air. On one of these occasions in April, he rushed out of his lodgings, and walked rapidly on the Calton Hill, when he found the dyspnœa left him. He insisted on repeating this on similar occasions, and he assured me it always produced the desired effect. As the season advanced, he prolonged his walks. A very common one with him was to the summit of Arthur's Seat, and in June all hæmoptysis and dyspnœa left him. He recommenced his studies also in the University at the commencement of the summer session in May.

At the end of July, I again carefully examined his chest. Although dulness under the right clavicle still continued, I was satisfied it was not so intense as formerly. On auscultation, there were loud friction noises, which completely masked the respiratory murmurs. The vocal resonance continued. On the left side there was still slight roughness of the inspiration, and prolongation of the expiration, but nothing more. His general health, though far from good, was much improved. He was still pale and thin. There was occasionally cough and tough expectoration. The appetite, he said, was good, and the bowels regular. I again cautioned him to avoid all exposure to cold and damp —to live well—to take exercise—and apply occasional counter-irritation to his chest, and he left Edinburgh for the autumnal recess.

In November 1844 he returned to Edinburgh. He was greatly improved in appearance, and described himself as being much stronger. During the holidays he had used horse exercise frequently, and been much in the open air. There was still occasional cough and tough expectoration, not tinged with blood. The physical signs were much the same as when I last saw him, although the intensity of the friction-murmurs had somewhat diminished. He positively refused to confine himself the next winter as he had done the last, being convinced that he could not breathe the confined air of a chamber without injury ; and it was with some difficulty that I obtained a promise from him not to go out during wet, or unusually severe cold weather. Every other precaution to avoid exposure to cold, and all exciting causes of exudation, was to be carefully observed. He attended his classes regularly for six weeks, when, owing to the weather, he lost several lectures. This caused him great annoyance,—the more so, as he intended to present himself for examination in the spring.

About the middle of January 1845, he sent for me. I found him with the face flushed, skin hot, rapid pulse, coughing violently, and expectorating a muco-purulent matter, tinged of a rusty colour. On listening over the apex of the right lung, there were heard crepitating and mucous râles, mingled with friction-murmurs similar to those which formerly existed. The rest of the lung was free. The apex of left lung was not affected. It was clear that a new attack of pulmonary congestion and exudation had taken place. He confessed that he had been very unwilling to send for me ; that he had felt himself getting worse for the last week, and was conscious that the attack had been occasioned by his persistence in attending classes, and sitting so many hours probably in damp clothes and wet boots. The same treatment as was adopted on a former occasion was again put in force—quietude, with tartar-emetic, and opium. In a week, the febrile symptoms had much abated, but the pulse continued quick ; the appetite was destroyed, and his strength was again much reduced. All attempts to eat occasioned nausea and disgust—he could take no animal food. The tongue was loaded, and there were almost continued acid eructations. I ordered tartar-emetic ointment to the chest ; and, instead of the tartar-emetic and opium internally, prescribed 8 grains of carbonate of magnesia, with ℨj. of sal volatile, to be taken three times a-day in a bitter infusion. Three days afterwards, I was much alarmed at the occurrence of diarrhœa for the first time, which continued two days, and evidently diminished his strength. Fortunately it ceased on suspending the mixture, and giving aromatic and astringent powders, with a quarter of a grain of powdered opium. In the beginning of February my patient was once again reduced to nearly the same condition that he had presented three years previously. I was encouraged, however, on listening to his chest by hearing only the friction and dry cavernous râles at the apex of the right lung. The crepitation had disappeared, and occasional mucous râle was heard about the middle of the right back. I made every effort now to re-establish the appetite, and introduce nourishment. Solid animal food and cod-liver oil were immediately vomited. All that he could retain in the stomach was a little rice pudding and milk. It was evident to me that unless the stomach could be quieted and

rendered capable of digestion, that he must sink. For two days I tried small doses of liquor potassæ and vegetable bitters, with effervescing draughts. I then gave a teaspoonful of cod-liver oil, but it caused insupportable nausea, and was vomited several times, although mixed with several essential oils in succession. The oil was therefore suspended, and ten drops of naphtha, with ʒj. of tincture of cardamons in ℥j. of infusion of Colomba, given three times a day. This medicine evidently checked the tendency to nausea and vomiting, and after continuing it three days, the cod-liver oil was again tried, and was now retained in teaspoonful doses. During the next fortnight it was found necessary to suspend the oil on two separate occasions, and to have recourse to the naphtha mixture. At the end of that time, however, he took it in dessert-spoonful doses, and from this period he once more began to recover.

It is unnecessary to record all the successive steps his improvement presented. In April he could again sit up, and at this time was taking four table-spoonfuls of the oil daily. At the end of that month he went out, and commenced taking gentle exercise whenever the weather permitted ; and in May he was in much the same condition as he was at the commencement of the winter session. On examining his chest, I now noticed marked flattening under the right clavicle. All moist râles had disappeared. Friction râles could only be heard at the end of a deep inspiration—there was loud bronchophony, and considerable dulness on percussion.

During the summer session he attended his classes with tolerable regularity, and prepared himself for his examination. On this subject he was very anxious; indeed much more so, it appeared to me, than he was with respect to his health. Seeing now his anxiety on this subject, I also became desirous that his mind should be relieved. He accordingly left Edinburgh about the end of July for London, where shortly after he passed the examinations at the College of Surgeons and at Apothecaries' Hall. On the approach of winter he wrote to me, saying that he was much better, and that he intended passing the winter with some relations in the West of England. He seemed to be impressed with the importance of avoiding every cause which could again excite a fresh pulmonary attack, and promised implicit obedience to my oft-repeated instructions. I heard from him from time to time, and he passed through the winter without accident.

It was in London during August 1846, that I once more examined my patient's chest. There was still marked dulness under the right clavicle, but it was by no means so deep or so extensive as formerly. There was a considerable hoarse murmur during inspiration, but the blowing character had disappeared. The expiration was prolonged and accompanied by a sibilant murmur. The vocal resonance was greatly increased. He was still pale and thin, but capable of taking considerable exercise. Every now and then he felt constriction in the right chest, which was removed by exercise in the open air. There was also occasional cough, but no expectoration. He gave me three cretaceous concretions, about the size of large pins' heads, which he had spat up the previous spring. He lived on the plainest animal food, and drank nothing but milk and water. His appetite had of late considerably improved, and he was now free from all dyspeptic symptoms. He had continued to take three tablespoonfuls of the oil daily up to a late period. I recommended his taking two tablespoonfuls of the following mixture three times a day :—℞. *Ferri Citratis, ℈ij.; Syr. Aurantii, Tr. Card. c. aa. ℥j.; Inf. Colombæ, ℥ij.* ℟.

He now established himself as a general practitioner in one of the midland counties of England, where he has been practising ever since. In the autumn of 1849, I again saw him. His appearance then and now is robust. He takes considerable exercise daily. There is no cough or expectoration. There is considerable flattening of the chest below the right clavicle ; but he inspires freely, and without difficulty. On percussion the sound is still dull, but much less so, and more limited in extent, than formerly. On auscultation, there is almost complete absence of respiratory murmurs at the apex of lung, but a

little lower down there is prolonged expiration, which is gradually lost in the healthy breath sounds. There is great increase of vocal resonance, probably owing in part to the density of the adhesions, and in part to the condensation and puckering of the lung. The left lung is healthy. He took the chalybeate and bitter mixture for some time with marked advantage. He found the appetite improve and his strength increase. At present he takes no medicine, eats heartily, and drinks only milk and water. His age is now twenty-eight.

In this case (of which, notwithstanding its length, I have only given a sketch, rather than a minute report), I presume there took place in the lung the same morbid changes as were described in Case I. In that case, cicatrization of the tubercular cavity occurred spontaneously,—in the other the disease was subjected to a long treatment; and it may be fairly asked, whether art was in any way connected with the happy result? As it is not from one case alone that we can arrive at the correct solution of such a question, I must direct attention to others, which, though not identical, are similar as to their character. I find it will be necessary, however, to abridge the details of these, in order to bring this communication within reasonable limits.

Case VI.—Mr B——, æt. 35, a superintendent of chemical works, consulted me in 1843, labouring under cough, difficulty of breathing, slight purulent expectoration, and increasing weakness and emaciation. On examining his chest, I found, on percussion, marked dulness under the right clavicle, and on auscultation, a sub-mucous râle with the inspiratory murmur, prolonged expiration with sibilant râle, friction sounds, and bronchophony. The left lung was healthy. He was ordered to take a tablespoonful of cod-liver oil three times a-day, and apply counter-irritation under the right clavicle. He continued his employment, took the oil regularly, and soon observed a marked improvement in his health. He took the oil uninterruptedly for nine months. Since then there has been occasional diarrhœa, and every now and then a return of the cough and shooting pains in the chest. He has, however, been enabled to continue his employment, and feels satisfied that the oil was of the utmost service to him. At present he sometimes experiences a sense of constriction at the upper part of right lung, and feels breathlessness on ascending a stair or making any unusual exertion. The slightest amount of free chlorine in chloroform brings on a paroxysm of cough. On percussion there is now only slight dulness under the right clavicle, but marked increase of vocal resonance. He is robust, and, with the exception of the occasional asthma alluded to, in perfect health.

Case VII.—Robert Kerr, æt. 32, entered the Royal Infirmary, August 1844, in a state of extreme emaciation. Such was his weakness that he could not stand without support. The disease was of at least two and a-half years' standing. He has been more or less addicted to drink. The appetite has been uniformly bad, and there has been often great thirst and occasional hæmoptysis and diarrhœa. There was profuse sweating at night, hollow suffocative cough, copious purulent expectoration, and great dyspnœa. On percussion there was complete dulness under the right clavicle, loud gurgling râle could he heard in the same situation, with perfect pectoriloquy. The left lung, however, was comparatively free, presenting slight tubular inspiration, prolonged expiration, and no increase of vocal resonance. He came under my care in November, the treatment having hitherto been directed to the relief of the cough, dyspnœa, diarrhœa, and other occasional symptoms. He was still excessively weak, with profuse sweatings at night, and copious purulent expectoration. The physical

signs remained the same. He was now ordered a tablespoonful of cod-liver oil three times a-day, which he took regularly for three months. Two weeks afterwards he was much better, and could stand without assistance. Tartar-emetic ointment was then ordered to be rubbed under the left clavicle, and counter-irritation was kept up for three weeks. Gradually the pectoriloquy merged into bronchophony, the gurgling râle disappeared, and was replaced by dry, hoarse, and blowing sounds. The expectoration diminished, the night sweats ceased, the patient became evidently more robust, and during the whole of the third month he remained under my care he considered himself quite well. It so happened at this time that numerous cases required admis-sion, and I found one morning (January 15, 1845), that he had been dismissed by the visiting Committee of Management, on the authority of the medical manager in that committee, as no longer being a fit object for the charity.

I lost sight of this man for eighteen months; but one day, in June 1845, I met him on the South Bridge, looking remarkably well. He told me that he had continued taking the oil for several months after leaving the Infirmary, and had obtained employment as a labourer on the North British railway, which was then in progress of formation. He was still so employed. I took him into a common stair and examined his chest. On percussion, there was still marked dulness on the left side, under the clavicle. On auscultation, there was very feeble respiratory murmurs, with occasional friction sounds at the apex; but a little lower down the breath-sound was loud, and the expiration prolonged. He stated that on going up a hill or a flight of stairs great breathlessness was excited, but that in every other respect he was in good health.

CASE VIII.—Louisa ——, æt. 22, a milliner, applied at the Royal Dispen-sary with the usual symptoms of phthisis in its advanced stage, in the summer of 1844. At the apex of the left lung, there was dulness on percussion, loud mucous râle, and bronchophony. The right lung was tolerably free of disease. For the last six months she had obtained very little work, and her food was deficient both in quantity and quality. Indeed, she lived almost entirely upon dry bread, and a little tea. A tablespoonful of cod-liver oil was ordered to be taken three times a-day. She attended at the Dispensary two or three weeks, and, as the oil caused no nausea or sickness, four tablespoonfuls were ordered to be taken daily. I lost sight of this girl for twelve months; but she again applied at the Dispensary, in the summer of 1845, labouring under a slight bronchitic cough she had contracted a few days previously. Her appearance was so improved that I did not recognise her; but she told me that she had taken the oil continuously for nine months, on account of the great benefit it had produced. Gradually all her symptoms had disappeared; she became stout and strong; and now considered herself in perfect health. On percus-sion, all dulness had disappeared; and on auscultation, with the exception of prolonged expiration, and occasional sibilant râle, nothing unusual could be heard. I was so struck with the perfect disappearance of the disease, that I called in my colleague, Dr Spittal, who was receiving patients in another room, to confirm the absence of the physical signs characteristic of a cavern, which he did.

There could be no doubt as to the existence of softened tubercle in the apex of the left lung in 1844, nor of its disappearance in 1845. At both periods the girl was repeatedly and carefully examined, not only by myself, but by from six to twelve gentlemen, who constituted my poly-clinical class; and on both occasions she was the subject of lecture.

In the four last cases related, I consider that there has been a perfect cure of phthisis pulmonalis in its advanced stage. In Cases V. and VII. there were distinct cavities; in Cases VI. and VIII.

the tubercle had softened, and probably occasioned small anfrac-
tuous cavities—but this cannot be determined. In Cases V., VI.,
and VII., the healing was followed by permanent dulness, more or
less consolidation of the apex of the lung, and dense adhesions
between the pleuræ covering the diseased part. In Case VIII., the
lesion must have been limited, and probably produced a fibrous
cicatrix, without adhesion or great condensation; and hence the
absence of dulness and vocal resonance afterwards. In Case VI. the
cure was accompanied by an emphysematous condition of the lung—
a frequent accompaniment of cicatrization in part of the pulmonary
tissue.   That the cure may be ascribed to art, and was not sponta-
neous in these cases, will, I think, be evident from studying the facts
they presented.   In all of them, improvement was contemporaneous
with the period when cod-liver oil was digested, and rendered assi-
milable to the wants of the economy, and in this respect confirms the
views I have put forth with regard to the mode in which the remedy
operates.

Our ideas with regard to the good effects of treatment, however,
would be very limited, if we confined our observation merely to such
cases as could be shown to have undergone a permanent cure. Such
is the difficulty of following the progress of these cases, that they
must always be limited in number. I am disposed, however, to
believe that the more extended a knowledge of the pathology and
diagnosis of phthisis becomes, and the more generally a treatment,
founded on the principles I am contending for, is adopted, the more
they will increase in number. But the advantage of a rational
treatment may be observed in most cases of phthisis, although an
ultimate cure is not attained. Life may certainly be prolonged,
and the distressing symptoms greatly ameliorated. No doubt, it
will always be difficult to ascertain how much of the benefit is to be
attributed to art, and how much to nature; but when we ascribe
an analeptic power to an oleaginous substance, and find, on its
administration, that the nourishment of the individual is improved,
that his strength augments, and a check is given to the disease,
our faith in the remedy augments the more frequently these circum-
stances are witnessed.

I could give a great number of cases observed in private, dispen-
sary, and hospital practice, in which the apparent good effects of the
treatment were extraordinary, but in which either the termination
of the case is unknown, or where the disease ultimately proved fatal.
The following are instances of this :—

CASE IX.—Agnes M'Laren, married, æt. 45, admitted into the clinical ward,
No. 12, of the Infirmary, November 22, 1844, has suffered from ill health and
occasional cough for the last four years at least. This is the fifth time she has
been in the house, from which she has always been discharged as relieved, after
a treatment varying from two to four months in extent, and consisting, in addi-
tion to cough mixtures, anodynes, antispasmodics, astringents, &c., of good
diet. At home, lives principally on a little tea and dry bread, with potatoes or

porridge for dinner. About once a week she has broth, or a little meat. On admission, a large cavity was detected in the apex of the left lung, and there were signs of crude tubercle in the apex of right lung. There was great emaciation, considerable sweating, purulent expectoration, and occasional diarrhœa and hæmoptysis. She remained in the house four months and a-half, having been treated with cod-liver oil, counter-irritation to the chest, and good diet. She was dismissed, April 10th, at her own request; on which day the report is as follows :—Dulness under left clavicle ; dry blowing murmurs in this situation, both with inspiration and expiration, which have been present without change for at least two months. Cough and expectoration trifling. General health good. Says she has not been so strong for the last five years.

In the course of a few months this woman applied at the Royal Dispensary, with the cavity full of pus, and a return of the emaciation and weakness. She was treated with cod-liver oil, but was unable to procure good diet. She again entered the Infirmary, and during the next three years she was alternately getting better in the house, and getting worse at home. 1 saw her for the last time at the Dispensary, in 1848, when the cavity was evidently much contracted. The conclusion of the case is unknown.

CASE X.—Jane Maitland, æt. 30. This woman had a considerable cavity in the apex of the left lung, with loud gurgling, and perfect pectoriloquy. Between the years 1842 and 1847 she had been in the Infirmary, under different physicians, at least seven times, and probably oftener. Her history is almost the same as the last, with the exception that she was never so much emaciated, and only felt great weakness; always getting worse on the bad diet she had at home, and as regularly getting better during her residence in the Infirmary. The termination of her case is also unknown.

In the following case, although it resembles the two just recorded, the termination was not only known, but the examination of the body after death exhibited the anatomical changes which occur in chronic phthisis when undergoing a cure :—

CASE XI.—Robert Elliot, æt. 28, was admitted into the clinical ward, No. 2, of the Royal Infirmary, December 30, 1844. He had previously left the house two months, having then been under treatment four months, and taking cod-liver oil with marked benefit. On admission he was much emaciated, and there were all the symptoms of phthisis in its advanced stage. On percussion, there was dulness under both clavicles, but to a much greater extent on the left than on the right side. Under the left clavicle, and posteriorly above the scapula, there was loud gurgling râle, with imperfect pectoriloquy. On the right side, there was occasional sibilant râle ; harshness of inspiratory, and prolongation of expiratory, murmur ; with bronchophony. He took cod-liver oil readily; and was treated, in addition, with numerous remedies to meet occasional symptoms, more especially diarrhœa and hæmoptysis. He left the Infirmary, March 10, 1845, conceiving himself to be nearly well. His strength and general appearance had greatly improved, the physical signs on the right side were unaltered; but on the left, gurgling râles had been for some time absent, and been replaced by dry blowing sounds. Some months afterwards he applied at the Royal Dispensary for some cod-liver oil, and was supplied with it regularly for a considerable time. He entered the Infirmary on two separate occasions subsequently, under different physicians, and was discharged in his own opinion well. In the summer of 1846, I was requested by one of the Dispensary pupils to visit one of his patients, affected with fever. It was this man Elliot, in a state of complete coma, and with the usual symptoms of typhus. I gave directions for conveying him to the Infirmary, but before this could be carried into effect he died.

Post-mortem Examination.—Permission for the examination was obtained with great difficulty, and the chest only was examined. The pleuræ covering the apex of the right lung were very slightly adherent. The summit of the

lung itself was deeply corrugated and puckered, and felt hard and nodulated. On being dissected, it was found to contain numerous cretaceous masses, enclosed within an indurated cyst, of greyish fibrous matter. The surrounding lung was loaded with black pigment, condensed and puckered; and the spongy substance in the neighbourhood of the indurated portions presented groups of enlarged air-cells—in short, incipient emphysema—(see Plate II., Figs. 1 and 2). The left lung presented two distinct stellate puckerings—one at the summit of the lung, the other about two inches below. Both these puckerings corresponded to a distinct oval cavity (as seen in Plate II., Figs 3 and 4). They both possessed a distinct lining wall, and were surrounded by an indurated capsule, connected with radiating cicatrisations in the pulmonary tissue. In the upper one (See Fig. 4) this was very distinct.

Now, I think there can be little doubt that, if this man had lived a year or two longer, the cavities in the left lung would have completely healed, and that there would probably have existed two cicatrices in the organs similar to that figured in Plate I.

I have confined my illustrations of the treatment of phthisis to well-marked cases, in which it was far advanced, and I think that the facts recorded hold out to us great encouragement in the treatment of this formidable disease. In the early stages its management is not so difficult, and is comparatively much more successful; not, indeed, that even then it is always easy to overcome the dyspepsia and other causes which tend to produce and keep up the disorder. I have pointed out, in another place,[1] that when the stomach is deranged, it often requires, as we have observed in Case I., a variety of remedies, to counteract its irritability and acidity, before nutritive substances can be taken. In other instances, however, especially when it exists in the half-starved poor, food is taken readily, and then amendment is generally soon observed. Again, although cod-liver oil may for a time be digested, it not unfrequently after a time causes nausea, and cannot be tolerated, and under such circumstances chalybeates, with tonics, constitute valuable auxiliaries.

Perhaps there is nothing that requires greater watchfulness on the part of the practitioner during his attendance on a case of phthisis than the disposition his patient so commonly exhibits to consider himself well on the removal of his more urgent symptoms. I have found this to be the great obstacle to conducting cases of phthisis to a favourable termination; indeed, nothing can be more discouraging to our attempts at cure. Hospital patients, for instance, who continue well when under treatment, at length insist on going out, and returning to the fatiguing occupations and insufficient diet which produced the disease. In the higher classes individuals commit all kinds of imprudencies, which bring on those re-accessions of the disorder which ought to be so carefully guarded against. The hopeful character, and absence of mental depression, which in one point of view are so advantageous, are in another most injurious. We have seen that it always requires a considerable time, under the

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[1] Lectures on Clinical Medicine, Part I., p. 43.

most favourable circumstances, to produce complete cicatrisation of a pulmonary cavern; and it must be evident that our ordinary hospitals are in no way adapted to such a lengthened treatment. Indeed, unless they were converted into asylums or hygienic establishments, in which employment and exercise, as well as medicines, were given to the inhabitants, the most important part of the treatment cannot be carried out. In short, it is comparatively easy to rally a patient from a state of great exhaustion, to check the perspirations, cough, and expectoration, and restore him to a tolerable state of health; but it is very difficult, he being in a satisfactory condition, to persuade him to keep himself so.

An equable temperature is certainly a most powerful auxiliary to treatment; but if, for the purpose of obtaining this advantage, we shut up our patients in rooms, the constraint often becomes intolerable, and a degree of mental depression comes on that does much mischief. Besides, in this way we lose the advantage of exercise, which is so powerful a stimulus to the nutritive functions. On the other hand, when a cavity becomes dry, when exudation is checked, and food digested, we run considerable risk during the winter, but more especially during the spring, in permitting exposure to the cold air, and the excitement, heat, and subsequent chills which, in such weak individuals, exercise occasions. On these points no absolute rule ought to be followed. I have confined several patients to their rooms during cold and changeable weather with much advantage; and they have subsequently died from imprudent exposure to cold during a voyage to a milder climate, or from some accidental cause that ought to have been avoided. Three cases in which I felt much interested, with large cavities, were in this way, in conjunction with a proper treatment, kept alive, and in tolerable health, from one to three years; but died on leaving ship, or on landing in some colony. On the other hand, I have seen great advantage from persons taking moderate exercise, well clothed, and cautioned against standing or sitting in the open air afterwards, so as not to take chill.

Then the complications and occasional symptoms which occur in this disease, present a wide field for the judicious interference of the physician, who will achieve more by saving his patient from unnecessary drugs, and giving nature fair play, than by what is called "doing something." For instance, I have never been able to satisfy myself of the advantage of giving mineral acids to check the perspirations. In such cases the stomach is generally already too acid; the albuminous matters are easily digested, whilst the oily principles are not. Surely acids will not improve this condition, but rather alkalies, as recommended by Dr Campbell, which I have always found very useful in certain states of the digestive process. If the recent researches of Bernard on the functions of the pancreas be attended to, it would appear that the secretion of that organ is alkaline, and necessary for the assimilation of fatty matters. It is very possible that the peculiar

dyspepsia of phthisical cases is connected with a deficient secretion of the pancreatic juice. But not to enter upon speculations of this kind, I regard it as an undoubted fact, that the perspirations in phthisis· are only evidences of the weakness of the individual. Restore his appetite and power of digestion, increase his strength, and the sweatings disappear. This is not to be done by giving sulphuric or nitric acid, but by cod-liver oil, and a wholesome diet.

I must now bring these remarks to a close, with the intention, however, of continuing the subject at some future period; but I cannot do so, without alluding to the diagnosis of phthisis, and expressing my conviction that the general notion of its incurability is mainly attributable to the fact that it is not recognised until it be far advanced. And yet there is, perhaps, no disease which by one practised in auscultation, may be more readily detected. The harsh or tubular inspiration, the prolonged expiration, the increased vocal resonance, followed by dulness on percussion, together with the well-known general symptoms, can leave little doubt in the minds of the observant. True, there will always be instances so nicely balanced between health and disease, as well as pathological conditions so fine, that they do not furnish indications that will enable us to speak positively. Stlll, if practitioners only accustomed themselves to detect the signs above mentioned, phthisis would in a great measure be disarmed of its terrors. In short, it is not that medical art is destitute of means of detection, but that the necessary skill is not sufficiently diffused among medical practitioners; for notwithstanding all that has been said and written on auscultation since the days of Laennec, it must be acknowledged among ourselves, that comparatively very few have sufficiently educated their ears to detect the finer thoracic murmurs.

The following are a few of the instances which have come under my notice, illustrative of errors in diagnosis:—

CASE XII.—An unmarried lady, æt. 25, quitted one of the northern Scottish cities, in 1842, to reside in Edinburgh. She had been harrassed with distressing cough, dyspnœa, and weakness, for three years, and during that time had undergone all kinds of treatment, general and local, to combat a supposed phthisis pulmonalis. Knowing her family, and noticing her condition, I was confidentially informed by the friends that her case was hopeless, and that her medical advisers considered her lungs to be unalterably diseased. So strong was this opinion, that it was with some difficulty I persuaded the family to allow me to examine the chest. On doing so, I found the pulmonary organs quite healthy. On percussing over the sixth and seventh dorsal vertebræ, she screamed aloud, and jumped from her seat, as if she had received a shock of electricity. The case was one of spinal irritation and amenorrhœa, which yielded to counter-irritation and appropriate treatment. At the present moment she enjoys excellent health.

CASE XIII.—A young lady, æt. 22, complained, in 1844-5, of great langour, weakness, irregular menstruation, and trifling cough. She applied to two surgeons, of great respectability in general practice, who happened to be attending another member of her family. The friends were informed that nothing was the matter but slight female derangement, and purgatives

and emmenagogues were prescribed. In the autumn, she and her family visited a watering-place, and the practitioner there took the same view of the case, and continued the treatment. One morning she was discovered dead in bed ; and, to the astonishment of all parties, both lungs were afterwards discovered filled with tubercles and anfractuous cavities.

CASE XIV.—I met a practitioner, some miles from town, in consultation on the case of a gentleman, who, I was informed, was labouring under acute pneumonia. In addition to the intense fever, I was told there was distinct crepitating râle over the whole of the right side, and that he had been actively treated by a large bleeding, purgatives, and tartar-emetic. On examining the patient, I found him in the last stage of phthisis, with loud mucous and gurgling râles heard over the upper half of right side. He sunk rapidly.

CASE XV.—The daughter of a medical man became very slowly unwell—indeed so slowly that the parents never noticed it. Three weeks before her death, Sir James Clarke was consulted, who detected caverns in the lung, not only to the great grief, but to the unbounded astonishment, of the father.

CASE XVI.—A medical student hurried over from Paris, to attend the medical classes in this university, at the commencement of the session 1843-4. In crossing the channel, he became very ill, and on arriving in Edinburgh laboured under great febrile excitement. The case was considered one of fever, then very prevalent in the city, and treated accordingly. He died in a few days, and on dissection the lungs were found covered with miliary and infiltrated tubercle. It was a case of acute tuberculosis.

Cases of this kind could easily be multiplied. They appear to me capable of showing, that the fatality of phthisis pulmonalis is in a great measure owing to its insidious progress, to its reaching an advanced stage before it is detected, or to carelessness in medical examination, rather than to any peculiar virulence of the disease itself. Many diseases, undoubtedly curable in an early stage, if undiscovered and allowed to proceed unchecked, might be considered equally fatal. In this point of view, it has always appeared to me that our large charitable institutions are incapable of checking the evil. At our dispensaries, and among the out-cases of a large hospital, it is scarcely possible for the physician, on the stated days, to do justice to his patients. I have no hesitation in confessing that on more than one occasion I myself have been prevented from carefully examining patients, from sheer fatigue. I believe the following to be a very common history of many applicants to these charities :—

CASE XVII.—A girl, æt. 19, applied to one of the Dispensaries, complaining of irregular menstruation, constipation, want of appetite, and various dyspeptic symptoms. She was ordered twelve purgative pills, and directed to take two every other night. Her chest was not examined. Three months afterwards she again applied, with hacking dry cough. She was ordered an anodyne and squill mixture, which increased the nausea and dyspeptic symptoms ; but she had her bottle filled regularly for two months. Diarrhœa now came on, which greatly reduced her ; and, on applying for the third time at the Dispensary, it was now seen that she was consumptive. The disease ran a very rapid progress, and she died in the Royal Infirmary.

Now this, I believe, is the case of thousands of persons who perish from consumption ; and I feel satisfied that, had the diagnosis of the disease been properly established at an early period, its onward march

might have been arrested. Phthisis, at this period, may be considered a very curable disease; indeed, so much so, that cure is, as we have seen, spontaneously accomplished by nature, in a vast number of cases. So long as misery and poverty exist on the one hand, and dissipation and enervating luxuries on the other, so long will the causes be in operation which induce this terrible disease. But the means of checking and controlling it on a large scale must be sought, not in drugs, but in hygienic conditions, and the diffusion among medical men of that knowledge and skill requisite for detecting the existence of the disease in its early conditions. In short, one of the most efficacious remedies consists in those practical instructions of the medical student at the bed-side, which are now systematically carried on in the clinical wards of this and some other schools of medicine.

In conclusion, let no one undervalue percussion and auscultation. And I say this, because I feel satisfied that, notwithstanding every body now-a-days carries about a stethoscope, there are few who derive from it all the advantages it is capable of bestowing. I would take the liberty of recommending to certain writers, in their popular expositions of medicine, in future to avoid sarcasms[1] which are only calculated to excuse indolence in students, and to depreciate the value of the scientific investigation of disease among practitioners. It is, certainly, a good thing to possess the sagacity and practical tact of a Sydenham or an Abercrombie; but it is better still to have, *in addition* to this, the practised ears and pathological knowledge of a Laennec or a Louis.

ARTICLE II.—*Notes on the Purification and Properties of Chloroform.*[2] By WILLIAM GREGORY, M.D., Professor of Chemistry in the University of Edinburgh.

(*Read before the Royal Society of Edinburgh, March,* 1850.)

1. CHLOROFORM has been prepared both from alcohol and wood-spirit. The latter has been used for the sake of cheapness; but as

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[1] "We wonder how many of the century of graduates sent forth from our University every year, armed with microscope, stethoscope, uroscope, pleximeter, &c., and omniscient of *râles* and *rhonchi*, sibilous and sonorous; crepitations, moist and dry; *bruits de râpe, de scie, et de soufflet;* blood plasmata, cytoblasts, and nucleated cells, and great in the infinitely little—we wonder how many of these eager and accomplished youths could 'unsphere the spirit of Plato,' or read with moderate relish and understanding one of the Tusculan dissertations, or who had ever heard of 'Butler's Three Sermons on Human Nature,' 'Berkeley's Minute Philosopher,' or of an ' Essay on the Conduct of the Understanding,'"—*N. Brit. Review,* November 1849. On this subject I am of opinion that, if our university graduates can detect the *râles* above alluded to, and know their diagnostic value, it must be a matter of comparative indifference to mankind whether they are able to " unsphere the spirit of Plato," or not.

[2] Although I am alone responsible for the opinions contained in this paper, it is my duty to state, that all the experiments and observations mentioned in it have been made by me in concert with my able assistant, Mr Alexander Kemp, of whose ingenuity and accuracy I have had constant opportunities of judging.

it is a mixture of several liquids, all of which do not yield chloroform, it gives an impure product, in a proportion which varies much, but is always below that obtained from alcohol. There is, therefore, not only no advantage, but the contrary, in using wood-spirit, which is not, after all, much cheaper than alcohol.

2. But the chloroform from these two liquids, *when fully purified*, is quite identical in all its properties. Its smell, density, boiling point, and action in the system, are, in both cases, exactly the same. That from alcohol is no doubt more easily purified than the other; but it, also, contains certain volatile oily impurities, which must be removed before it can be safely used. The peculiar oils which adhere to both kinds of chloroform are not identical, or at least not all identical; but they are of analogous constitution and properties.

3. Soubeiran and Mialhe have examined these oils. They contain chlorine, have a disagreeable smell, and when inspired or smelt, cause distressing headach and sickness. In the case of wood-spirit, some of its own impurities distil over unchanged, and are also found in the chloroform.

4. It is well known that many persons, after the use of chloroform, have suffered from headach, nausea, and even vomiting, as I have more than once seen. Headach and nausea I have myself often experienced, when I have tried different specimens of chloroform, without taking so much as to produce the full effect.

5. Perfectly pure chloroform, such as is now on the table, does not, so far as I have seen or experienced, produce these disagreeable effects. It is, therefore, highly probable, that when they occur, as they do with some individuals, from the use of chloroform of more than the average goodness of quality, they depend on the presence of a trace of these poisonous oils.

6. All good manufacturers of chloroform purify it by the action of oil of vitriol, which destroys the oils, while, at the same time, a part of the acid is reduced to sulphurous acid. The chloroform, to remove this, is then distilled with lime or carbonate of baryta, and is tolerably pure, if the process be well conducted.

7. But it is not quite pure, and contains a trace, more or less distinct, of the oils. I have found this to be the case with all the best chloroform made here, up to 1849; and I have several times seen headach and sickness from the use of such chloroform, which, as we all know, was the best anywhere made. I must add, however, that the quantity of oils was, although variable within certain limits, always, in the chloroform of the best Edinburgh manufacturers, so small, that that product was fit for use, and only caused headach, &c., in a few peculiarly sensitive persons.

8. It was desirable to have a test for these impurities, as well as an easy and effectual mode of removing the last traces of them, especially as many sorts of chloroform not made here were far inferior in quality to that prepared in Edinburgh. One very delicate test is,

that oil of vitriol, which should be quite colourless, pure, and of the full density of 1·840 at least, as it may be obtained by Mr Kemp's process, lately read to the Royal Society, when agitated with the chloroform, becomes yellow or brown, from its action on the oils, which it chars and destroys. Any change of colour is easily seen by the contrast with the colourless chloroform which floats above. Pure chloroform gives no colour to the acid. It is essential that the oil of vitriol be colourless, and also of full density: for if coloured, it is not easy to see a slight change on its colour; and if below the proper density, that is, too weak, it is not much coloured by a chloroform which will render dark-brown the acid of proper strength.

9. Another test, still more delicate, I find to be the smell of the oils. When chloroform is poured on the hand or on a handkerchief, it rapidly evaporates; but the oils, being less volatile, are left behind; and their smell, previously covered by that of the chloroform, is easily recognised. Until very lately, no chloroform was sold, or indeed known, which would stand this test, or even the former.

10. Up to 1849 the best commercial chloroform had a sp. gr. of 1·480, which was considered a guarantee of its purity. But it had been obtained by chemists of sp. gr. 1·494, and even 1·497. I have found that chloroform, of 1·480, when once more acted on by oil of vitriol, which destroys the oils and becomes brown, may be obtained, after removing the sulphurous acid, of sp. gr. 1·500 at 60°. This I take to be the sp. gr. of pure chloroform. Our best makers have lately, much to their credit, pushed the purification so far as to furnish chloroform even of this highest density, and also, in other respects, such as it ought to be.

11. There are still, however, many makers in other places, whose chloroform is not so pure; and I shall now describe the method which, with Mr Kemp, I have employed for purifying, perfectly and easily, any commercial chloroform, except one remarkable specimen, —of which more hereafter,—a process which will enable any medical man to purify it for himself with the greatest facility.

12. The chloroform, having been tested as above, and found more or less impure, is to be agitated with oil of vitriol (half its volume will be sufficient), and *allowed to remain in contact* with the acid, of course in a clean, dry, stoppered bottle, and with *occasional agitation*, till the acid no longer becomes darker in colour. As long as the action is incomplete, there will be seen, after rest, at the line of contact, a darker ring. When this no longer appears, the chloroform may be drawn off, and, for greater security, once more acted on by a quarter of its volume of the acid, which should now remain colourless. It is now to be once more drawn off, and, in a dry stoppered bottle, mixed with a little powdered peroxide of manganese, with which it is gently agitated, and left in contact, until the odour of sulphurous acid is entirely destroyed, and the chloroform has acquired a mild agreeable fruity smell. It has then only to be poured off into

a proper phial.   It will now leave no disagreeable smell when eva-
porated on the hand.   (If the commercial chloroform, after having
been *frequently well shaken* and *left for some time in contact* with the
acid, has given to it only a moderate tinge of colour, it is probable
that it may be completely purified by the first process.   To ascertain
this, test a fresh portion in a tube with fresh acid, shaking well, and
allowing it to stand some time.   If it do not colour the acid at all,
then the whole chloroform has only to be finally purified by the oxide
of manganese.   If the acid become coloured in the test-tube, it will
be as well to act on the whole chloroform a second time with fresh
acid, till it stands the test.   Mr Kemp has observed, in repeating
this process for me, the very curious fact, that as soon as the action
is complete, and the oily impurities are destroyed, but not sooner, the
chloroform tested with the acid in a tube exhibits a strongly convex
surface downwards, where it rests on the pure acid, or what is the
same thing, the acid becomes concave at its upper surface.   The
smallest trace of impurity, not sufficient to affect the density of the
chloroform, we have found to render the line of junction horizontal.
It is probable that this may become a valuable test of the perfect
purity of chloroform; but we shall not say more on this subject until
we have thoroughly examined it.)   This process requires no appa-
ratus beyond a few stoppered bottles and a pipette, if we wish to draw
off the whole chloroform without loss, although nearly the whole may
be simply poured off.   The use of the oxide of manganese is due to
Mr Kemp; and on the large scale the chloroform may be filtered
through a cylinder full of it.   In this final purification of commercial
chloroform, no distillation is necessary.   Indeed, no rectification is
required at all, if it be well washed with water before using the acid.

13. It may be considered as certain, that the use of chloroform
thus purified, will very rarely, if ever, cause the disagreeable effects
above noticed.[1]   As to more serious bad results from the use of

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[1] Dr Simpson informs me, that the purest chloroform he has used not unfre-
quently causes vomiting.   On farther inquiries, I find that this occurs when
it is administered after a full meal.   This can easily be avoided, and must not
be confounded with the headach, nausea, and vomiting alluded to in sections
4 and 5, which symptoms are persistent, and occurred, in my experiments,
always with an empty stomach, the experiments being made an hour or two
before dinner.   Mr Carmichael, assistant to Dr Simpson, has mentioned to me
some facts which confirm the view I have taken.   At one period for more than
a week, Dr Simpson and Mr Carmichael were kept in a state of continual
anxiety by the occurrence in all the puerperal cases in which chloroform was
used, of very unpleasant symptoms, particularly of frequent pulse and other
febrile symptoms, lasting for some days.   At last, after much annoyance from
this cause, it occurred to Dr Simpson that he was using one particular specimen
of chloroform, above the average in quality.   As soon as this idea occurred,
he threw away all that remained, and returned to that which he had generally
used. The unpleasant symptoms no longer appeared. (I regret much that I had
not an opportunity of examining that specimen; but I may add, that the maker,
not an Edinburgh one, now produces chloroform of much better quality, though

chloroform, so often spoken of elsewhere, it is enough to state, that a large proportion of the cases must be attributed to the use of a liquid so impure as hardly to deserve the name of chloroform at all. Such a product I rejoice to say our Edinburgh manufacturers have never sold; and I may add that, no doubt chiefly in consequence of this, our practitioners have yet not seen a fatal result from the use of chloroform. But in London and elsewhere, chloroform has been extensively sold, so bad, that I have examined specimens which did not contain half of their bulk of chloroform, in some cases not a third or a fourth part, and I have seen one which hardly contained any at all. But to make up for this, they were rich in poisonous oils, and often in free hydrochloric acid. Very many specimens, although better than this, are yet so impure, that no one could with comfort or safety use them.

14. The chloroform now, and for some time past, made here, is of first-rate quality. I have two specimens which are absolutely pure, or nearly so, and a third, which is hardly inferior,—all made and sold by Edinburgh manufacturers.

15. On the other hand, I have various specimens, maker unknown, besides some from makers in other places, which are not so pure, although in general much purer than those which I examined nearly three years' ago. But one specimen deserves a separate notice. It is labelled "*pure chloroform.*" It is yellowish, has a strong smell of the oils, and of impure pyroxalic spirit; and when treated with its own volume of oil of vitriol, develops much heat, colours the acid dark, and disappears almost entirely, any trace of chloroform it may contain being boiled off by the heat disengaged. It contains also so much free acid that the cork is corroded. It is to be hoped this product no longer disgraces the market; I do not know the name of its maker. Three of the specimens became milky when mixed with the acid. One, after contact with the acid, acquired a strong smell of musk. Another lost about a third of its bulk. All but two coloured the acid strongly, and all left more or less of a disagreeable smell on the hand. One of the two which did not at first much colour the acid was that which acquired the smell of musk; the other, evaporated on the hand, left a white stain, depending partly on the matters present in the skin; this was the case also with another; yet these two hardly coloured the acid at first, but both left a smell on the hand. I have subjoined a tabular view of 12 varieties of chloroform.

not yet absolutely pure). But the striking fact is this, that Dr Simpson and Mr Carmichael state, *that during the period above alluded to, when that one kind of chloroform alone was used by them, their handkerchiefs became quite offensive from the smell left on them, which even adhered to them after washing.* There can, I think, be no doubt, that here the oily impurities alluded to in sections 4 and 5, were present in notable quantity. I suspect that a majority of the speci-mens mentioned in the table would have a similar effect, more or less marked. (I have since ascertained that this specimen, which, unless tested as I have recommended, would have appeared pure, *was not subjected to the action of oil of vitriol.*)

VARIETY OF CHLOROFORM.	SPECIFIC GRAVITY AT 60°.	ACTION OF CONCENTRATED SULPHURIC ACID,	WHEN EVAPORATED ON HAND.	GENERAL REMARKS.
No. 1.	1·347	Became milky and yellow, changing to brown; after twenty-four hours, very dark brown; it also diminished in volume.	Left a strong smell.	The low density here proves at once the great impurity. In contact with the acid, it lost one-fifth or one-fourth of its volume. Density also far too low, but less impure than No. 1. Both would be very dangerous to use.
No. 2.	1·465	The same as No. 1, except that it did not diminish nearly so much; after twenty-four hours, it had become very dark.	The same as No. 1.	This is much better than Nos. 1 or 2, but yet not pure.
No. 3.	1·495	Little affected on mixture; after some time, dark brown; it also acquired a distinct smell of musk.	Left a very distinct smell	Resembling No. 4; probably the same maker.
No. 4.	1·475	Became milky, and then yellow; after twenty-four hours, very dark brown.	The same as No. 1.	Of good quality, but not pure.
No. 5.	1·495	Became milky, and afterwards pale yellow; but diminished only slightly in volume; dark brown after twenty-four hours.	Distinct smell.	Nearly as No. 5. I have reason to think, that the chloroform mentioned in the note, page 417, was not more impure than No. 6. Rather better than Nos. 5 or 6.
No. 6.	1·490	Became yellow, but did not diminish much in volume; dark brown after twenty-four hours.	Distinct smell.	
No. 7.	1·495	Little colour developed, till after frequent shaking and twenty-four hours' contact.	Distinct smell.	This certainly did not contain more than 1·30th of chloroform. It had not even the smell of that substance, and contained much free hydrochloric acid, as well as the poisonous oils in large proportion. Its use would be most dangerous.
No. 8.	...	Became dark brown, and very hot; nearly the whole of it dissolved in the oil of vitriol used.	Left a very strong and disagreeable smell	The full density, and very nearly pure; quite fit for ordinary use, although it might easily be rendered quite pure.
No. 9.	1·500	Became yellow, at first, dark brown after twenty-four hours.	Slight smell.	Full density. It can hardly be distinguished from the purest chloroform I have myself prepared. But even this did not exhibit the convex surface downwards, when resting on the acid.
No. 10.	1·500	Very slight change, after twenty-four hours.	Just perceptible smell.	Not sufficiently pure for use, but better than several others.
No. 11.	1·490	Became brownish yellow, as No. 4; afterwards darker.	Distinct smell.	This, as well as Nos. 3, 5, 6, 7, 9, and 11, would all have been called quite pure two years, or even one year, ago; but all of these require to be purified.
No. 12.	1·500	As No. 9; strongly coloured, after some time and frequent shaking.	Distinct but slight smell.	

16. In conclusion, I would remark, that while the use of chloroform in Edinburgh, in many thousand cases, has never yet led to a fatal result, I do not intend to maintain that the use of pure chloroform never can cause fatal effects. On the contrary, I have no doubt that, if rashly, carelessly, or ignorantly administered, so powerful an agent may, like any other powerful drug, especially in individuals of peculiar temperament, and in cases of severe though latent internal disease, give rise to fatal results. That no such cases have here been met with is due partly to the good quality of the chloroform used, and to the care with which it is prepared; and partly to the experience and judicious management of those whose duty it is to administer it,—at the head of whom stands the introducer of chloroform, my friend and colleague Dr Simpson.

It is much to be regretted, that, in London and elsewhere, chloroform is not by any means so extensively employed as it ought to be, in consequence of the occurrence of some fatal cases, attributed (whether in all cases accurately or not, is a question) to the drug. There can be no doubt that most, if not all, of these cases, have resulted from the use of very impure chloroform, such as even at a recent period was largely sold in London; and that, if pure chloroform alone had been employed, there would by this time have been no prejudice against its use. It is not, as I have shown, even necessary that chloroform should be very impure, in order to produce very disagreeable, or even dangerous results. It is evident that even a small proportion of the oils above mentioned, if they are deleterious (and this cannot, I think, be doubted), will suffice, when applied in the form of vapour, to the internal surface of the lungs, to act powerfully on the system. On the other hand, I am far from blaming those chemists who have manufactured impure chloroform for anything more than the want of a due care in the preparation of an agent so energetic. And it is but fair to bear in mind, that it was a new manufacture hardly yet fully understood, and that those who made it were not probably aware, either of the existence of the impurities, or of the best mode of removing them. I have no doubt they did their best to produce a good article; and my chief object in this paper, has been to put it in the power of every one to do so, and to point out strongly the bad effects of even a small amount of impurity.

It is possible that some of the fatal cases may have occurred from an injudicious mode of administering the vapour, or from the operator entrusting the administration to persons not qualified to recognise those signs which tell the experienced practitioner that it is time to stop. There ought always to be two well qualified persons present, one to watch, without intermission, the effect of the vapour, which he also administers as required; the other, of course, to operate. He who gives the chloroform must carefully attend to the state of respiration, as has often been recommended by Dr Simpson. But these are matters beyond the proper province of this paper, and I leave them to those who are better qualified than I am to discuss them.

I have only to add, that this paper was written and read before I heard of a recent article in "Chambers' Journal" on the subject, and that I had not the remotest knowledge of, or concern in, that article, which I have not seen, although, as I am told, the author of it agrees with some of my conclusions, in regard to the employment of chloroform in London.

Postscript.—Since writing the above, my attention has been called to a paper, by Dr Wilson, on the specific gravity of chloroform, which he was not able to obtain higher than 1·498. I have, therefore, to add, that every specimen, whether of sp. gr. 1·480, 1·490, or 1·497, which I purified as above, acquired the same density of 1·500, as ascertained by the use of a very delicate and accurate bead (made by Lovi), which sank at 60·5°, and rose at 59·5°; and also by three successive weighings with a very delicate balance. It will also be seen, that three commercial specimens had this density. I could detect no foreign matter in my chloroform; and besides, every foreign matter that is likely to occur *lowers* the density. I have no doubt that Dr Wilson's specimens would have coloured the acid, and left a smell on the hand.

I may add, for the maker, that, after distilling the materials which yield chloroform, no distillation or rectification is needed. He has only to wash the heavy fluid with water till its volume no longer diminishes, and then to use the oil of vitriol as above, finishing with the oxide of manganese. Distillation with the acid is of no use, because no proper contact can take place, the chloroform distilling from the surface as it would from mercury. In testing by oil of vitriol, it is best to use some ounces of chloroform, and to shake it in a phial, because, in a test-tube, the colour produced, if not strong, may be overlooked.

While I acquit the makers of chloroform who have sold an impure drug, of all desire or intention to adulterate it, I feel it my duty to point out, that the system which permits *any one* to set up as a manufacturer of this or of any other potent remedy, without let or hindrance, without any test of his qualifications, without, in short, enforcing a knowledge of chemistry and pharmacy as an essential condition, is a radically bad one; and that our law, in relation to druggists and apothecaries, requires reformation. In fact, the evils naturally resulting from it are only neutralised, and that but in part, by the good feeling and principle of the leading manufacturers.

To illustrate this, I may remark, that some of the makers of chloroform must have been very ignorant even of what was known and published concerning its properties. For among the specimens in the table are several of sp. gr. below 1·480—which was long ago given as the standard—even so low as 1·347.

That this neglect proceeded more from ignorance than from intention is, I think, plain, from the fact, that No. 8, labelled, "Pure Chloroform," actually contained only a trace—about $\frac{1}{30}$th—of that substance. I did not ascertain its sp. gr., which must have been far lower than 1·200 or 1·100—nay, possibly under 1·000; because

its impurity was so obvious in every other respect, and the quantity
I had was too small.   But, on examining it further, I am convinced
that its origin was this :—The maker, after distilling the materials,
obtained, of course, two liquids—a lighter, and a heavier.   He evi-
dently *did not know* that the latter was the chloroform, and there-
fore threw it away, and preserved the *lighter*—a mixture of pyroxalic
spirit, of its natural impurities, of the deleterious chlorinised oils,
and *a trace* of chloroform.   At least, such are its characters; and
it exactly resembles what would be obtained in the way supposed.
But what a fearful degree of ignorance (without any evil intention)
is here exhibited!   And yet this maker was free to produce and sell
pure chloroform, which was actually almost *pure from chloroform*,
and loaded with deleterious agents.

ARTICLE III.—*Observations on the Action of the Acetate of Potash in
some Diseases of the Skin,—Illustrated by Cases.* By J. A. EASTON,
M.D., one of the Physicians to the Glasgow Royal Infirmary,
Lecturer on Materia Medica in Anderson's Institution, &c.
        (*Read before the Glasgow Medical Society on* 19*th March* 1850.)

IN submitting to the Society the following observations regarding
the acetate of potash in the treatment of certain diseases of the skin
under my charge in the Royal Infirmary of this city, I beg to state,
in the outset, that I was led to employ that remedy from reading the
lectures of Dr Golding Bird, delivered before the Royal College of
Physicians of London in April 1848, and reported in the 6th and 7th
volumes of the New Series of the " London Medical Gazette."   I
am anxious also to impress upon my professional brethren, that the
speculations in the following pages regarding the *modus operandi* of
that salt in the diseases in question—those at least which are entitled
to consideration and deference—have likewise emanated from the
same distinguished medical philosopher; and that, where I have
ventured on a modification or more extensive application of his views,
I have endeavoured to keep within the limits of established doctrine,
or, at all events, of what appeared to be permissible theorising and
legitimate inference.

The following cases, out of several in which the acetate of potash
was used, have been selected as presenting the skin diseases most
commonly met with, and they include *Psoriasis diffusa, Psoriasis
palmaris, Lepra vulgaris, Eczema rubrum,* and *Eczema impetiginodes.*
To save the wearisome repetition of almost similar details, I shall
abridge from the journals of the hospital, the reports which were
taken on the admission of the patients by my intelligent clerk, Dr
James Howie, and shall then annex a short summary of the promin-
ent circumstances in the progress and result of each case.

CASE I.—*Psoriasis diffusa.*—"Ann M'Intyre, æt. 16, servant, admitted 18th
September 1849. About five months ago, without assignable cause, patient
observed some small red patches on lower extremities, which were soon covered

by whitish scales, which fell off, leaving the surface red, shining, and tender to the touch. The patches gradually enlarged, till at length they formed an almost continuously affected surface. Two months after patches had appeared on lower extremities, some were observed on the upper; these soon extended, so as to cover the arm from the wrist to above the elbow. On admission, the upper and lower extremities are found to have the usual appearance of psoriasis. Elbow, wrist, and knee-joints, but especially the last, are deeply fissured, and covered with thick yellowish crusts. One or two patches have also appeared on the face." *To use the alkaline warm bath every day ; to take five grains of the Iodide of Potassium thrice daily, and a Plummer's pill every night.* Under this treatment the disease continued to increase in intensity and diffusiveness till the 13th October, when she was ordered the following mixture :—*Acetate of Potash ʒv., Water ℥xij., Mix.; of this mixture take an ounce thrice daily. Omit the other medicines.* Was dismissed cured on 7th December. Duration of disease from commencing acetate of potash less than two months. Let it be noticed, that in this case iodide of potassium and Plummer's pill, though per- sisted in for nearly a month, failed to make the slightest impression on the disease. No record was kept of the state of the urine.

CASE II.—*Psoriasis diffusa.*—"Sarah Miller, æt. 18, factory worker, of full habit of body, admitted 19th September 1849. About two months ago an eruption of small red patches, covered with white scales, appeared on lower extremities, and three weeks ago on upper extremities. The lower extremities present the usual appearance of psoriasis diffusa, and the eruption is not so general or intense on upper extremities. Skin hot ; pulse 72, full." She was ordered the warm bath, and to take 4 ounces of the following mixture morn- ing and evening :—*Nitrate of Potash,* 2 *drachms; Sulphate of Magnesia,* 1 *ounce; Water,* 24 *ounces—Mix.* On the 24th September, she was put on the acetate of potash, and the diuretico-cathartic mixture was discontinued. She was dismissed cured on the 14th November, the disease having lasted nearly two months from the period when the use of the acetate of potash was com- menced. No record was kept in this case either of the condition of the urine.

CASE III.—*Psoriasis diffusa.*—"Margaret Lindsay, æt. 40, laundry-woman, widow, admitted 26th November 1849. On admission, the whole dorsum of left foot and lower half of leg are covered with a scaly eruption, having numer- ous fissures. The scales being removed, the subjacent surface presents a red shining appearance, and the scales are quickly reproduced. The right leg and both arms are similarly affected, but in a milder degree." Was ordered an ounce three times daily of the following mixture :—*Acetate of Potash,* 6 *drachms; Water,* 12 *ounces—Mix.* Patient was cured of· the psoriasis in less than four weeks, but remained in the hospital a fortnight longer in consequence of cephalalgia. Average quantity of urine passed per diem 7½ pounds—16 ounces to the pound. Average sp. grav. 1·016.

CASE IV.—*Eczema impetiginodes.*—"Margaret M'Callum, æt. 21, unmarried, bleacher, admitted 19th January 1850. Two months ago, after some pyrexial symptoms, patient observed a vesicular eruption on upper extremities. It was attended with some itching, and when scratched, gave exit to a clear fluid, which concreted into yellowish crusts. Of late, however, the eruption has assumed a pustular character. On admission, the skin between wrist and elbow-joints, and on forehead and cheeks, is covered with a continuous yellow crust. Pulse 110, full ; tongue dry ; skin hot." This patient was first bled to 12 ounces, and had a smart purge of calomel and jalap. The blood drawn was buffy. On the next day (the 20th), the pulse being 96, and the febrile symp- toms considerably abated, she began the use of the acetate of potash in half- drachm doses thrice daily ; and I may here mention, that this is the quantity which I now invariably prescribe to adults. This woman left the hospital cured on the 23d of February, having been under treatment by the acetate one month and three days. It is of consequence to note that the urine voided

during the first twenty-four hours after admission, and before any medicine was given, was only eight ounces, high coloured, and of sp. grav. 1·032 ; the average amount under the use afterwards of the salt, was 54 ounces, of average sp. grav. 1·019.   In reference to this case, it is but fair to mention, that within the last few days I have been informed by my friend Mr Menzies, one of the surgeons to the city poor, that the disease re-appeared a short time after the patient left the hospital.

Case V.—*Eczema impetiginodes.*—" Rachel M'Allister, æt. 31, single, dye-worker, admitted 19th January 1850." This case was so similar to the foregoing, that I think it unnecessary to transcribe the details *ad longum.*   There was no febrile exacerbation, however, in this case as in the former, the pulse on admission being 84, the tongue moist, and the skin cool.   Amount of urine voided during the first twenty-four hours—no medicine having been given—was 32 ounces, of sp. grav. 1·013.   She was put on the usual treatment, and, subsequently, the average quantity of urine was 78 ounces, of average sp. grav. 1·016.   She left the hospital all but cured on the 2d March.

Case VI.—*Psoriasis, with Extensive Desquamation of Cuticle.*—" William Dorrington, æt. 28, tailor, single, admitted 14th December 1849.   Patient was treated in this house four years ago for an affection similar to the present.   On admission, the skin of face is dry and covered with white scales, giving the appearance as if a quantity of flour had been applied.   There is also extensive desquamation on back and arms, the lower extremities from knees downwards being red and somewhat swollen.   Gums slightly tender, which patient ascribes to the slight use of mercury before admission."   As this man was considerably debilitated, I deemed it advisable to improve his general health before having recourse to the acetate of potash.   Accordingly, for a few days after admission, he was ordered nutritious diet, and the citrate of iron and ammonia.   His condition being ameliorated by these means, he began the use of the acetate of potash, combined with infusion of gentian, which treatment was continued till he left the hospital cured on the 23d January 1850.   Duration in hospital, one month and nine days.   No record kept of urine.   When this patient was treated in the hospital for a similar affection four years ago, he remained there for thirteen weeks.

Case VII.—*Eczema rubrum.*—" George Morris, æt. 39, weaver, married, admitted 29th November 1849.   A small patch of vesicles is situated on the inside of right forearm a little above the wrist.   This eruption appeared about two weeks ago, and is now attended with considerable prurigo, and when scratched, gives exit to clear fluid.   An eruption of about twelve months' standing is situated on lower extremities, from a little below the knee downwards.   This is stated to have commenced in exactly the same manner as the eruption did on the arm ; at present it has a bright red appearance, and the affected surface, especially if scratched, exudes a clear fluid.   General health good."   Acetate of potash was administered as usual, and the amount of urine, which, during the first twenty-four hours after admission, amounted to the unusually large quantity of 4½ pounds, or 72 ounces, speedily and steadily increased till on one occasion it rose to as high as 11 pounds, or 176 ounces.   Under the use of the salt the average quantity was 120 ounces, of average sp. grav. 1·012.   It ought to have been stated that the sp. grav. of the 72 ounces voided before any medicine was given, was 1·016.   This man was dismissed cured on the 22d December 1849, having been in the hospital three weeks and two days.

Case VIII.—*Psoriasis palmaris.*—" Michael Dyer, æt. 14, admitted 29th January 1850."   This was a case of psoriasis palmaris of five months' duration, and is presented merely because the patient, being a boy of only fourteen years, received the acetate of potash in smaller than the usual quantity, the medicine having been given,in doses of 10 grains thrice daily.   The average quantity of urine voided under the influence of the salt, was 56 ounces, of average sp. grav. 1·017.   He remained in the hospital five weeks, and was then dismissed cured.

CASE IX.—*Lepra vulgaris.*—I saw the following case only once, and for the subjoined account of its history, treatment, and result, I am indebted to Mr T. D. Buchanan, druggist, Argyle Street, at present a student in the hospital. " J. B., aged 15½ years, flesher's apprentice. States that five years and eight months ago an eruption appeared on hands and head, at first red, and afterwards covered with white shining scales. He was put on the use of vegetable tonics without benefit, afterwards sent to sea-bathing, where he remained only a few days, until he was completely covered with the eruption. He was then removed to town, and placed under the care of a medical man, who prescribed the warm bath every night, and the use of various ointments, some of which were supposed to contain some preparation of mercury. This treatment had little or no effect. The bed-clothes were filled with white scales in the morning. After a considerable interval, he commenced the use of Fowler's solution, and continued it until he had taken several ounces, with no benefit. Eight months ago he began to use the iodide of starch, and continued it for about four months with slow improvement. About the beginning of October last the appearance of his hands and face was so repulsive, that he was about to be dismissed from his employment. About the beginning of December last (1849) he was seen by Dr Easton, who suggested a trial of the acetas potassæ. The suggestion was adopted, the boy began gradually to improve, and by the end of January the eruption had entirely disappeared, and has shown no symptoms of return up to this date, 16th March 1850."

On reviewing the details of these cases, the first thing I think worthy of being noticed, is the comparative shortness of the duration of the individual diseases. The inveteracy of skin diseases in general is proverbial; and it would be easy to show, were it not superfluous, that the duration of the foregoing cases affords a pleasing contrast to that of many others of a similar kind treated by agents as diversified as numerous. Any remedy, therefore, which promises not only to remove such diseases, but to do so in a much shorter period than is usually required to accomplish that object, cannot fail to recommend itself to every enlightened practitioner, as being at least worthy of a trial. It is of consequence to remark farther, that the benefit produced in these cases was entirely attributable to the acetate of potash. As I was anxious to put the properties of this salt, as a therapeutic agent, to the most rigid test, I purposely avoided the internal use of any remedy but itself. No doubt the alkaline warm bath was had recourse to in most of the cases every day, and the affected extremities were frequently fomented. The co-operation of these valuable auxiliaries was, I admit, availed of pretty generally—in the acuter cases always; but with the exception of the blood-letting in the case of the woman M'Callum (No. IV.), of the cathartico-diuretic mixture, given for a few days at first, in the case of the girl Miller (No. II.), to subdue general plethora, and of the adjuncts of iron and gentian, in the case of the man Dorrington (No. VI.), to remove if possible a very opposite condition,—with these exceptions, I repeat, no other medicine was administered than the acetate of potash.

Having thus noticed these two circumstances, which lie on the surface, so to speak, of this investigation, I next proceed to consider the more prominent effects of the medicine, and how far these may be

held to indicate its physiological action, and to explain its remedial effi-
cacy.   In the first place, the administration of the salt was followed
by a great increase in the amount of urine.   Making allowance for
difference in season, difference in the state of the atmosphere, and for
other causes which are known to influence the secretion of urine, I
need scarcely remind you, that the average quantity voided during
twenty-four hours,—and I certainly do not take the lowest standard
—is about 40 ounces, or 2½ pounds.   Now, the smallest amount of
urine which was voided in the cases under review, was 54 ounces,
as in case IV.; while the greatest was 7½ pounds, or 120 ounces,
as in cases III. and VII.,—there having been, in the case in which
the amount was lowest, an increase of 14 ounces; and in those cases
in which it was highest, an augmentation of 80 ounces over the ordi-
nary quantity. These facts speak conclusively, I think, as to the diure-
tic power of the acetate of potash.   But the term diuretic is of vague
signification,—at all events, two very different results follow the
administration of different classes of remedies, each of which is com-
prehended under the general appellation of diuretics.   Thus, some of
these increase merely the amount of the *water* of the urine; others,
the amount of its *solid constituents*, urea, lithic acid, and the salts.
Under the former may be ranked broom, juniper, squill, digitalis,
and, to use the language of Dr Golding Bird, "all those agents
which out of the body exert no chemical effect on animal matter."
Such substances, which Dr Bird calls renal hydragogues, appear to
influence exclusively the Malpighian bodies of the kidneys,—that
delicate expanse of capillaries to which, as has been shown by Mr
Bowman,[1] has been entrusted the duty of separating the water that
is discharged from the blood by the renal glands.   I am of opinion,
then, and the facts submitted warrant the conclusion, that the acetate
of potash increases the water of the urine,—in other words, that it
acts as a renal hydragogue.   But it performs, when administered, a
more important part in the animal economy, and renders more essen-
tial service in the removal of disease than what is imparted by its
simply hydragogue influence; and this leads me to consider another
effect of the salt, which I am anxious to call attention to, as having
been manifested in the cases under consideration.

      II. It was formerly remarked, that some of the medicines called
diuretics increase the quantity of the solid constituents of the urine;
and I now proceed to show, in the second place, from the cases
under review, that the acetate of potash possesses this property in so
remarkable a degree, as fully to entitle it to be considered a renal
alterative or blood-depurant, as well as a renal hydragogue.   The
elimination from the blood of the solid constituents found in the
urine may be considered the function of the kidney *par excellence;*
for, while this gland undoubtedly separates superfluous water from
the circulating mass, it cannot be said, if I may be allowed the

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[1] Philosophical Transactions for 1842.

expression, to possess a monopoly in that respect, seeing that super-fluous water is likewise discharged by the lungs and the skin. But it is specially—I may say exclusively—the office of the kidney, as well to de-acidify the blood, as to rid it of redundant nitrogen,—effect-ing the former of these objects by loading the urine with acid salts; the latter, by elaborating and excreting urea and lithic acid. Ac-cordingly, the amount of these nitrogenous compounds in the urine, both of which, according to Dr Bird, are produced from the meta-morphosis of nitrogenised elements of worn-out tissue or mal-assimi-lated food, may be assumed as a measure of the amount of the destructive assimilation of nitrogenised tissues or other matters in a given time; for it may be regarded as a general exceptionless fact, and be enunciated with the emphasis of a general law, that all soluble matters in the blood, which are either not able, or are not needed, to contribute to the growth and reparation of the tissues, are ejected by the kidneys. Now, while the investigations of Mr Bowman[1] have shown, as already stated, that the Malpighian capillaries separate the water of the urine, it has also been established by the same distinguished physiologist, that the separation of the solid constituents, or what may be called the peculiar urinous principles, is effected by the cells which line the tortuous uriniferous tubes, exercising their secreting power for that purpose on the blood of the portal capillary plexus, with which the bodies of these tubes are in intimate contact.[2] The amount of these urinous principles influences, of course, the density of the urine, and while the exact amount of them which is voided in a given time can only be determined by a quantitative analysis of that fluid, still, by attending to its specific gravity, we can ascertain whether they be above or below the normal amount. The specific gravity of water being estimated at 1·000, that of healthy urine ranges, as is generally understood, between 1·015 and 1·025; but, from a very painstaking and very extensive observation of this matter in our hospital, my friend and colleague, Dr Mac-Gregor, whose original researches into the pathology of diabetes entitle him to all credit for accuracy and trustworthiness, has come to the conclusion, that 1·016 is the number which expresses more

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[1] Philosophical Transactions for 1842.

[2] The views of Mr Bowman, regarding the separate functions performed by the Malpighian bodies, and the portal capillaries which issue from them and invest the tubes, are supported by the anatomical arrangement—first pointed out, I believe, by that gentleman—of the renal vessels in the boa constrictor. —" Philosophical Transactions," 1842. Additional evidence of the accuracy of Mr Bowman's opinion has been adduced incidentally in a paper, by Dr George Johnson, in Vol. XXX. of the " Medico-Chirurgical Transactions" (1847), in which Dr J. remarks:—" Within the last two months, I have examined the kidneys of two persons, who died jaundiced, and in whose urine there had been a quantity of bile. Many of the urinary tubes were stained of a deep yellow colour, by the bile in their epithelial cells. This yellow colour ceased abruptly at the neck of the Malpighian bodies, and in no instance did I observe it in the Malpighian bodies themselves."

correctly than any other the specific gravity of healthy urine. To the correctness of this statement my own little observation of this point leads me to subscribe. If, then, 40 ozs. of urine, of sp. grav. 1·016, be voided on an average in twenty-four hours, is there any mode short of performing a quantitative analysis—a proceeding not likely, for many reasons, to be had recourse to generally—by which we can estimate, more precisely than by merely contrasting the difference between 1·000 and 1·016, the waste of tissue which has taken place during that period in the noiseless laboratory of the organism? On this point Dr Bird supplies information so practically important that I make no apology for quoting from him nearly *verbatim*. After urging the necessity of ascertaining the integrity of the blood-depurating function of the kidney, and acknowledging, at the same time, the practical difficulties of doing so by evaporating the urine to as dry an extract as can be obtained, he calls attention to the advantages presented by the more rapid and easy determination of the quantity of solids from the specific gravity of the urine, and then subjoins a table, which he has constructed for the purpose of ascertaining that point. The peculiarities and the mode of applying this table to practical purposes, will be best gathered from the following sentences :—" Thus, if the specific gravity of any specimen of urine be expressed in four figures, the two last will indicate the quantity of solids in a fluid ounce of the urine, within an error of little more than a grain, when the density does not exceed 1·030; above that number, the error is a little greater. To illustrate this, let us suppose we are called to a patient, the integrity of the depurating functions of whose kidneys we are anxious to learn. The quantity of the urine excreted in twenty-four hours amounts, we will suppose, to three pints, or sixty ounces, and the density of the mixed specimens passed in the time alluded to is 1·020 ; now, we merely have to multiply the number of ounces of urine by the two last figures of the specific gravity, to learn the quantity of solids excreted, or 60×20=1200 grains." Now, bearing in mind the characteristic function of the kidney, and that the measure of its activity as a blood-depurating organ may be calculated by the specific gravity of the urine, let us see how far the function in question was influenced by the acetate of potash in the cases under consideration ; in other words, to what extent the *solid constituents*, as well as the *water*, of the urine, were increased by that salt. In the cases in which the least urine was voided—being 54 ozs. in the lowest (Case IV.), and 56 ozs. in the second lowest (Case VIII.), the specific gravity was respectively 1·019 and 1·017 ; while in those in which the amount was highest, the specific gravity was 1·012 in one of them (Case VII.) 1·014, in the other (Case III.)—the average quantity voided by each of these patients having been 120 ozs. To those who take but a superficial view of this matter, the results just stated in reference to the specific gravity in these cases—particularly in reference to that of the two last—may appear inconsistent with the statement

that the acetate of potash increases the solid constituents of the urine, and thereby promotes the depuration of the blood. If such be the case, why, it may be asked, is the specific gravity not above the normal standard, instead of being below it? A moment's reflection will explain the reason, and show that the salt under consideration acts powerfully in promoting the elimination of those peculiar urinous principles which result from the secondary destructive assimilation of effete tissue, mal-assimilated food, and all abnormal products of low vitality and imperfect organisation. In all the cases the amount of water holding these solid constituents in solution was materially—in Cases III. and VII. enormously—increased; and it must never be forgotten that, if the *same amount* of solid matter be dissolved in a larger or smaller quantity of water, the specific gravity will be proportionally lower or higher. Thus, when the menstruum is much increased, the specific gravity may not be above the normal standard, and yet the activity of the kidneys, as blood-depurating organs, may be very great; for with the increased amount of water, there is washed out from the blood an increase of the solid urinous constituents also; and yet, as these are not in a comparatively concentrated solution, but diffused through a large amount of menstruum, the density may relatively be not higher than usual—nay, it may even be lower. Connecting this fact, then, with Dr Bird's table, and keeping both steadily in view, we shall find that, when 54 ounces of urine were voided, of the sp. grav. 1·019, as in Case IV., the blood was depurated to the extent of 991 grains in twenty-four hours; while, when 120 ozs. were passed, of the sp. grav. 1·011, as in Case VII., the separation of salts and waste of tissues, as indicated by the criterion of the specific gravity, amounted to 1440 grains in the same period. These results, then, furnish, I think, abundant evidence of the power which the acetate of potash possesses in promoting the metamorphosis of tissue, thereby increasing the solid constituents of the urine, and proportionally depurating the blood.

III. But, in the third place, this salt, which is so capable of accomplishing the metamorphosis, not only of ordinary effete tissue and mal-assimilated food, but that, also, of many of those products of low vitality which either constitute, or are the manifestations of, a *materies morbi*,—this salt, I say, thus potent to alter and renovate, is itself altered in its progress through the laboratory of the organism, it being well known that the salts of the vegetable acids are all converted in the system into carbonates, and as such are found in the urine. Now, I think it is susceptible of proof, having the strength almost of mathematical demonstration, that the benefit derived from the acetate of potash in such diseases as those I have spoken of, is owing substantially to its being converted into the carbonate of that alkali. But, before adverting to this change which the acetate of potash undergoes in the system, there are some circumstances connected with the action of the carbonate of potash that require to be noticed at this stage of our inquiry. That the carbonate of potash

can exercise a transforming influence over organic compounds out of the body is undeniable. Thus, albumen, digested with an alkali, is broken up into secondary compounds, yielding leucine, formic acid, and the bodies allied to gelatine, called protid and erythro-protid. In like manner casein is broken up into tyrosin, leucine, valerianic acid, and other substances. These being some of the effects which this salt produces out of the body, is it too much to presume, with Dr Golding Bird, " that, when we cause an alkaline carbonate to circulate through the blood, it exerts an influence on the nascent elements of those matters less highly influenced by life allied to that which it exerts on dead matter, aids their resolution into substances allied to those produced out of the body, and actually causes the matter to assume so soluble a form as to allow of its ready excretion ?" This notion may be objected to as savouring of mate-rialism, and as tending to lower the controlling influence of the vital principle from its high place in the creed of the physiologist as a car-dinal doctrine of his faith. This, however, is not my intention; for every one knows that he has "that within" which laughs at the skill of the chemist, and defies the power of his most searching re-agents; and that, so long as the body is endowed with the vital principle, it can resist, in manner most mysterious, those humbling alterations which so speedily ensue when, separated from its nobler associate, it becomes the subject of resistless change and elemental resolution. The laws of chemical affinity can effect great changes—on dead and lowly vitalised bodies most marvellous changes—but they are not omnipotent; for where, let me ask, is their potency, when the acid gastric juice is not permitted to prey on the living stomach, and what power is it, but life itself, which gives to that otherwise unpro-tected organ a perfect immunity from such a corrosive fluid? But, while all this is willingly conceded in regard to the more perfect structures, I think it can scarcely be doubted that the vital force is not the sole agent in producing what may be called the chemical phenomena of life; or that, on bodies of low vitality and imperfect organisation—such as the noxious matters which are produced in the system by disease—the laws of chemical affinity, or of chemical ten-dency rather, as Dumas expresses it, are uncontrolled in their ope-ration and effects. If proof were needed to establish this point, it might be derived from the circumstance, that many compounds which, at one time, were supposed to result entirely from unseen processes in the laboratory of nature, and to be incapable of being formed by any other, are now elaborated with ease by the manipu-lations of the chemist. Need I refer to the successful imitation of nature in the production, by artificial means, of urea, valerianic acid, &c., in such forms that the artificial are undistinguishable from the natural?

But the objection may assume a more practical shape, and it may be urged, if the beneficial results spoken of be owing to the circula-tion of the carbonate of potash in the blood, why not administer the

carbonate from the first, rather than trust to its production in the system from the decomposition of the acetate? The answer to this objection is found in the fact, that the exhibition of the carbonate as carbonate does not produce the effects which follow the administration of the acetate. No doubt the urine may be rendered alkaline by the use of the carbonate, and the aggregate quantity of the excretion may be somewhat increased—in short, the carbonate may alter the reaction of the urine, may act occasionally as a renal hydragogue, but very inefficiently as a renal alterative.[1] The effects of these salts, and the theory deducible from these effects, may be thus expressed in syllogistic phraseology, slightly modified. The acetate of potash increases the solid constituents of the urine; the acetate of potash is converted in the system into carbonate of potash; the carbonate of potash does not increase (materially) the solid constituents of the urine; *ergo*, the effect on the urine of the acetate of potash is due to its conversion into carbonate. The inquiry being thus narrowed, and reduced, as it were, to a focus, it falls, I think, within the scope of legitimate inference to conclude, that the physiological action and therapeutic efficacy of the salt are connected in some manner—unknown, I admit, at present—with the metamorphosis which takes place in itself. With the view of elucidating this matter a little, it may be advisable to look at the chemical composition of the acetate, and the difference which exists in that respect between it and the carbonate. Putting the base out of view as being merely allied to a different acid, we find that acetic acid is composed of—

$$C_4 \qquad\qquad H_3 \qquad\qquad O_3,$$

and that carbonic acid is composed of—

$$C \qquad\qquad\qquad\qquad O_2.$$

Now, as the hydrogen and oxygen are in equal proportions in the acetic acid, it is clear that these elements will unite to form water, and will leave, consequently, four atoms of free carbon to unite with any body for which, of course, it has an affinity. But we are not left in doubt as to the individuality of the body with which the carbon combines; for we find that carbonic has been substituted for acetic acid; and we know that this could only have resulted from the union of carbon with oxygen. Nay more, we know, not only that the carbon has united with oxygen, but we know, further, that

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[1] While conducting a series of experiments, with the view of establishing this point, my zealous clinical assistant, Dr James Wallace, observed in two cases that the urine contained copious deposits of the triple phosphate, and, what is singular, that these appeared immediately after the use of the acetate had been stopped. These deposits were probably owing to the urine, now diminished in quantity by the withdrawal of the salt, being no longer able to hold the phosphate in solution. Be this the explanation or not, the observation of such deposits is of practical interest, and imposes the necessity of examining the urine microscopically in all cases when giving the acetate, and immediately to intermit its use when a phosphate makes its appearance.

eight atoms of oxygen must have been furnished to convert the four equivalents of carbon of every atom of acetic acid into carbonic acid. But these changes which acetic acid undergoes will be made more apparent from the subjoined diagram :—

CONVERSION OF ACETIC ACID INTO CARBONIC ACID AND WATER.

1 eq. Acetic Acid, . .	C_4	O_3	H_3	4 eq. Carbonic Acid, .	C_4	O_8	—
8 eq. Oxygen, . . .	—	O_8	—	3 eq. Water, ...	—	O_3	H_3
Total, ...	C_4	O_{11}	H_3	Total, ...	C_4	O_{11}	H_3

It becomes a matter of great interest, then, though unfortunately one of great difficulty also, to ascertain whence this large amount of oxygen is supplied. Any opinion, however, on this point, must, in the present state of our knowledge, be purely conjectural; yet, at the risk of appearing presumptuous, I shall hazard a few speculations on the subject, which, though they may not carry conviction, will, I hope, excite inquiry, elicit discussion, and perhaps conduct to knowledge; for, to use the beautiful language of Bulwer, it should ever be remembered that the agitation of thought is the beginning of truth.

There are, I think, only three sources whence the oxygen can be furnished—from the food, the atmosphere, or the organism, including, by this last term, all the products, normal and abnormal, which exist for the time being in the system. As, for obvious reasons, there was no great likelihood of the oxygen having been derived from the food of those patients whose cases have formed the basis of these observations, I pass at once to the consideration of the second and third named sources. It is the opinion of Liebig, that the salts of the vegetable acids, which are converted in the system into carbonates, derive the supply of oxygen necessary for that purpose during respiration. This, however, is given, if I mistake not, merely as an opinion—certainly not supported by demonstrative evidence, and, if I recollect rightly, not even by a reason *why* these salts should appropriate oxygen in their passage through the lungs; and, with all deference to so great a master in science, while no proof is afforded in favour of the opinion, there are one or two circumstances which, I think, are entitled to consideration as militating against it. In the first place, the speculation assumes that the decomposition and reconstruction of these salts are effected in the lungs, and leaves out of view the more likely influence of digestion in effecting such changes. Again, this opinion presupposes a greater activity of the respiratory process while such salts are making the transit of the lungs—an event not appreciable, certainly, by any increase in the number of the respirations. And, if more oxygen be not withdrawn from the air, and it be maintained, notwithstanding, that the supply of the gas necessary for converting acetates, &c., into carbonates, is furnished during respiration, then the advocates of that opinion are shut up to the conclusion that, in order to effect the alteration of certain salts, some part or parts of

FIG: 1.   FIG: 2.
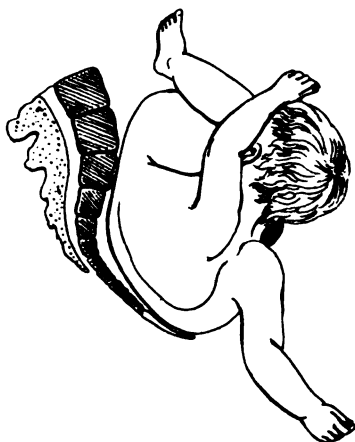
FIG: 3.

FIG: 4.   FIG: 5.

Illustrates the progress of Spontaneous Expulsion of the Child.

the organism are deprived of a portion, or, for anything we know to the contrary, of *all* their oxygen—a procedure scarcely in accordance with the general tendency of nature's operations. A theory at least as plausible, I conceive, as this, and one as much in unison with ascertained facts, can be constructed, by supposing that the necessary oxygen is derived from the organism itself. That the effete portion of the organism is being continually disintegrated and resolved into a variety of new forms in the capillary laboratory of the system, is well known and undeniable; is it too much, therefore, to suppose that, amid these ever-varying transitions, a vegetable acid may be broken up and altered, by being brought within the sphere of nascent oxygen, evolved from compounds yielding to the resistless influence of the secondary destructive assimilation? This, however, is all theory—and, probably, very erroneous and untenable theory —and, therefore, though agreeing with Dr Whewell, that "false theory often proves more advantageous to science than the absence of theory," I shall descend from the airy region of speculation, and leave to others the task of solving this interesting problem in the chemistry of therapeutics.

I have thus submitted evidence, that the acetate of potash is a valuable agent in certain cutaneous diseases; I have also proved that it increases the water of the urine, and its solid constituents likewise; have shown that it is itself converted into a salt, which dissolves and transforms tissues which are but imperfectly organised; and lastly, I have endeavoured to show, that the beneficial effects of the medicine are in some way, yet unknown, connected with the change which is effected in itself. Whatever opinion may be entertained of the theoretical conjectures I have hazarded, I trust my readers will not overlook the practical observations which have been presented likewise; and, in the hope that these will be submitted to the test of experience, I respectfully urge them on their consideration.

ARTICLE IV.—*Case of Spontaneous Expulsion of the Child; with Remarks on this Form of Delivery, and on the Treatment of the Placenta under extensive Morbid Adhesions.* By ROBERT DYCE, M.D., Lecturer on Midwifery, Marischal College and University, Aberdeen.

(*Read at the Medico-Chirurgical Society of Aberdeen.*)

I was called about midnight on Saturday, 30th December 1848, by a midwife, to visit Mrs C——, the wife of a tradesman, living in Castle Street. I was informed that labour had commenced in the evening about six hours before,—that the presentation remained long high,—that the membranes ruptured naturally,—that the waters were in great quantity,—and that several strong pains had followed after the discharge of the waters, before any part of the child could be felt,—a limb was at length reached, which was made out by her

to be an arm. When I first saw the patient she had very strong forcing pains, the arm was at the top of the vagina, doubled up, so as to present the elbow. A part of the child, nearly equal in bulk, was felt on either side of the presenting limb,—viz. one part near the pubes, and the other near the sacrum, but so high that, unless I had passed my whole hand into the vagina, which I did not at the time deem essential, the individual parts could not be made out. It was sufficient for my purpose that the arm presented, and that delivery could not be accomplished without turning the child. In order, therefore, to render the operation easier, by quieting the uterine action, which was very powerful, I gave her, as soon as it could be procured, a tea spoonful of laudanum, determining to operate the moment a lull took place. This, however, never happened, for presently the pains forced the elbow lower, the hand came down into the vagina with hardly any assistance, and was ascertained now to be the right one. At this time the proportionate size or bulk of the two parts of the child became remarkably altered. The arm, shoulder, and neck, which formed one part, pressed towards the pubes, and appeared smaller; while the other end of the tumour, which was now distinctly made out to be the back of the child, along with the ribs and spine, which was twisted and bent, now came completely to occupy the hollow of the sacrum. It now became very apparent that nature was to complete the delivery herself, by expelling the child double, or by what is called spontaneous expulsion. At length, after two or three powerful pains, the shoulder was very closely pressed, or jammed rather, against the arch of the pubes, and at length external to the vulva, while the breech pressed out the perinæum, and was expelled by a very long and powerfully-continued pain, the feet following quickly in its wake, the arm never moving from its position under the pubes. The head soon followed, and the delivery was speedily completed. The child (a girl) gasped once or twice, but could not be recovered.

The size of the abdomen indicated the presence of another child, which, on examination *per vaginam*, was confirmed, as the membranes were reached. I also discovered in the examination a circumstance by no means desirable,—viz. that the integuments of the abdomen, limbs, face, and in short the whole body, were extensively œdematous, for lying, as the patient did, with her back towards me, I had no opportunity of discovering this before.

No pain coming on in half-an-hour, the membranes were ruptured. The waters were in very great quantity. An arm again presented, but along with the head. It was attempted to keep up the limb, so as to let the head descend alone; but the pains were so violent, that both head and arm were forced into the pelvis, and expelled together. The breech remained during two or three equally severe pains at the birth, owing to the cord, which was very short, being twisted round one thigh and leg, by which it was tucked up tight upon the infant's abdomen; its removal immediately caused the

expulsion of a second girl, alive and strong. In a quarter of an hour pains returned, but no part of the placenta could be felt; and as the uterus felt contracted, small, and tolerably defined, while no hemorrhage at first ensued, no interference was resorted to. Very shortly, however, the pains became very severe, along with hemorrhage to some extent, so as to lead me to fear that irregular contraction either had taken place, or was impending, and that probably one of the placentæ might be separated. The hand was immediately introduced. One placenta was found loose in the lower part of the uterus, a portion of the other in the contracted part, while by far the largest portion was imprisoned above, in the upper chamber of the uterus. The usual methods were carefully tried to separate the placenta,—viz. by patting it, by grasping it from its edge to its centre, while the uterus was steadied by the hand on the abdomen externally,—but no impression was made upon it. It was then attempted to remove it bit by bit, but so firmly was it attached, and to so very large a surface, that I for a moment hesitated what was best to be done,—whether to persevere carefully in my present proceeding, or to leave some of the lobules adhering to the uterus. Both methods were attended with danger; but knowing well the great risk there is in separating a strongly and morbidly-adherent placenta, from the difficulty in distinguishing the soft and loose structure of the womb from the mass of the placenta, I decided on the latter method. I therefore kept my fingers close to the placenta, and pinched off several of the lobules, and left them adhering to the uterus. The womb now contracted regularly, and expelled my hand and the placenta together. Hemorrhage ceased, and the pulse, when I left at two in the morning, was 86. The woman had a most perfect recovery.

Here is a case of a very unusual description;—one presenting a form of labour of extreme rarity, while it at the same time is accompanied with so many untoward circumstances, as well nigh to embarrass even an experienced hand. It will be remarked that it was a *twin* case, in which an *arm* of each child was the presenting part; that the patient was affected with *general* as well as *special* dropsy (of the amnion); that there was *hour-glass* contraction of the womb; extensive *morbid adhesions* of the placenta; and lastly, *hemorrhage* to some extent. It is principally to the form of labour, and the mode of treating the placenta, under the state here observed, that I wish to direct the attention of the members of the Society.

That the labour is one of extreme rarity, I may appeal to the experience of those present, as well as to the works of authors on the subject of midwifery. None here, I believe, have ever met with a similar case. Davies says he never met with a case, nor did Merriman; Ramsbotham, in a foot note, mentions " being present at four cases during the expulsion of the fœtus from the outlet;" Burns informs us that in the city of Glasgow, with a population of 200,000 inhabitants, " I cannot learn that more than one case of spontaneous evolution has taken place," his remarks are hence not made from

personal experience; Gooch saw but one case; Collins says, "no instance of it occurred in the hospital during my assistant or mastership;" and but one doubtful case during the residence of his predecessor, Dr Clark; "Chailly had but twice occasion to observe the mechanism of spontaneous evolution;" and Dr Douglas, to show its rarity, calculates that this form of labour does not occur oftener than once in 10,000 times. Denman has collected thirty cases, scattered over the practice of a number of men, but it does not appear that he himself met with more than one, or at most, two cases. I might extend this inquiry, but these references from the works of men of eminence and extensive experience, will be sufficient to prove that it is a *rare* form of labour.

This rarity no doubt was the reason why the true mechanism of this form of labour remained so long unknown. Denman, who was the first English physician to call the attention of the profession to it, and who gave it the name of *Spontaneous Evolution*, did not, it would seem, arrive at its true mechanism; yet his explanation was the commonly received one from the year 1772 until 1811, a period of about forty years, when Dr Douglas of Dublin made known what he conceived to be its real nature, in a short pamphlet upon the subject. Previous to this time, it was believed that the arm which presented receded into the uterus, that the child turned on its own axis, and that the breech came down in its place, just as it does when turning artificially is accomplished; but this change Douglas combated, while, at the same time, he illustrated his views of the subject by the publication of some cases, which prove that, instead of the arm returning, it became more and more protruded, until not only it but the shoulder was external to the pubes—that there it remained fixed—that the breech, by the continuance of the pains, came to occupy the hollow of the sacrum—that this was at length born—and that the arm which first was expelled never moved, and was actually the last to leave its position under the pubes.

Gooch followed some years after, in 1819, and, in his usual graphic style, described a case which confirmed the views of Douglas, and has since that time been received by the profession as the true mechanism of spontaneous expulsion. I need not transcribe his case, as we find it detailed in the " Med. Transactions of the College of Physicians," vol. vi., but I beg to recommend its perusal as being a most perfect account of the process of what is called spontaneous expulsion, and one which coincided in every particular with the case I have just read.

It has been mentioned by some authors, notwithstanding the evidence adduced by Douglas, Gooch, and others, that there may be some cases of this form of labour where the arm does actually recede as the breech comes down, hence that Denman was perfectly correct in the description he gave of the mechanism of his form of labour; and in corroboration of this position, a case is brought forward as related by Boer, where the hand which had appeared externally did distinctly recede on his attempting to introduce his hand for the

purpose of turning, and the breech commenced its descent so as to occupy the hollow of the sacrum. Upon this case Rigby remarks : " That this is very different from a case of spontaneous expulsion,— the child had not yet begun to press against the brim, or to assume any definite position,'—it lay completely across the pelvis, and that, as the pains increased, the breech, being nearest the brim, descended, and the arm in consequence receded." Gooch, who also notices this case, believes it to have been only a breech case, the hand having accidentally slipt down into the vagina; because he says in every instance in which this process (spontaneous expulsion) has taken place, the arm has been protruded up to the shoulder; whereas in this, the fingers never descended lower than to become visible externally. Many years ago, while quartered at the Cape of Good Hope, I met with a case in many respects very similar to Boer's, and which at the time made a strong impression on my mind, as to the correctness of Denman's description. The patient was the wife of a soldier of the 75th regiment, in labour of her first child, and at or near the full time. The midwife in attendance, on finding it a case of difficulty, called me in. I learned that the patient had been many hours in labour, and that an arm presented. The arm I found in the vagina, and the hand appearing externally. I attempted to introduce my hand for the purpose of turning, but the increase of the already powerful pains, and consequent resistance, rendered this impossible. A large dose of laudanum (80 drops) was given, and farther attempts delayed for half-an-hour. At the end of this time, although the pains were only moderated, not subdued, I proceeded to the operation; but what was my surprise to find that the arm had disappeared, and that in its place the breech had come down, and was already close upon the perinæum, and was soon after, by very severe pains, expelled, with the legs doubled up as in an ordinary breech case, without the least assistance upon my part.

I readily concede that this is a very distinct case from the one heading this paper, and which has called forth these remarks. But is it not equally possible that there may be more than one form of spontaneous expulsion ? That the case just narrated, with Boer's and others which might be mentioned, may be *one form* of spontaneous expulsion, or really " evolution," the same which Denman observed; and that the cases described by Douglas and Gooch may be another form of the labour, and, strictly speaking, " expulsion; " and that whether the one or the other form is to terminate the labour, in short, whether the arm is to recede into the uterus, or remain protruded until the completion of the labour, will depend on the following circumstances :—First, upon the size of the child; second, upon the position which the child has assumed at the brim; and thirdly, and especially, upon the state of uterine action.

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[1] Query,—Is it possible for an arm to be appearing externally, and the child not pressing against the brim ?

With regard to the last of these causes, I fancy every man who has had much experience in midwifery practice will admit, that he has not unfrequently met with cases where, during some part of the labour, and more especially the latter stage, the pains have not all been equally effectual,—that even though there was the same amount of suffering, there was not an equal advance in the labour; nay, the patient herself will often tell you that such and such pains, though as strong and as ill to bear, are not doing her so much good —they are felt to be different. This, I believe, is arising from the uterus acting *unequally*,—that one part is acting more energetically than another, and thereby in a manner counteracting, or at least interfering with and deranging, the effect of the whole,—for to be effectual in forwarding labour, every part, both back and front, must equally do its duty. Now if this is a fact in respect of common labour, may it not equally operate in the form of labour now under consideration?

I find that in every recorded case of spontaneous expulsion, the action of the uterus is described as being impetuous. The whole organ is acting not only energetically but uniformly and equally,— the pressure upon every part of the child will thus be uniform;— hence the arm once down in the vagina will be kept from receding by the contractions of the anterior fibres;—nay more, by the impetuous uterine action will be forced even lower, while the more flexible parts, so to speak—the back and breast—are driven down to the back of the pelvis by the equally strong action of the posterior fibres. Thus, by the combined and uniform action of the whole organ, Douglas' form of spontaneous expulsion is accomplished. But in the other form, or Denman's, I conceive that the uterus, although it may still be acting energetically, is still not acting equally; that while the posterior fibres are strongly contracting and forcibly pressing the breech into the back of the pelvis, the anterior fibres may be acting much less strongly,—consequently the resistance they offer is not only not sufficient to keep the arm down in the vagina, but actually allows itself to be overborne, and the arm to be pushed along with the shoulder and head beyond the brim, so that it recedes from its situation in the vagina, while the breech, by the continued strong action, occupies its place;—thus forming Denman's " spontaneous evolution."

But besides this unequal uterine action, I consider that the position which the child assumes at the brim has an important influence over the two forms of labour,—viz. upon the relative proportion which the body, on one side, and the neck and head on the other side of the presenting part, bears to the centre of the brim of the pelvis. If, for instance, in a case of arm-presentation, a greater proportion of the neck and head be perceivable on examination than there is of the body on the other side of the presenting arm, and the uterine action is strong and uniform, then one of two things will happen: if the child is at the full time and large, it will be jammed into the pelvis, and delivery will not be accomplished *but* by turning; while if

the child be immature or small, then the arm will remain down, be protruded along with the shoulder externally, and the breech falling into the hollow of the sacrum, spontaneous expulsion, as at present .understood, will be accomplished.

If, however, on the other hand, more of the body of the child is perceivable on the one side of the presenting arm than there is of neck and head on the other, the shoulder perhaps just resting on the brim, then I imagine the unequal action of the uterine fibres, favoured by this position of the child, will enable the arm to rise, and eventually to disappear, while the breech, with the legs doubled up, will descend and fill the pelvis, and form spontaneous evolution. I would still, therefore, recognise and retain Denman's name of spontaneous evolution for the cases in which the arm recedes; and Douglas' and Gooch's name of spontaneous expulsion for those in which the arm remains down.

It has been a question with some authors, seeing that occasionally an otherwise impracticable form of labour may be terminated by the natural powers alone, whether it is right to wait for this process.

Denman, amongst others, was very favourably inclined to this delay; but it is now an established rule in midwifery, that we are not warranted in waiting for it, because the delay must be extremely hazardous to the mother, and almost certainly fatal to the child.

There are, however, though rarely, cases occurring, and the one now read to the Society corroborates the observation, that " under certain concurring circumstances, a fair opportunity may be permitted for the accomplishment of labour by the natural powers alone ;" and it is important to note the combination which here existed, and which made its completion so probable. It will have been remarked, that the labour, from the moment I saw the patient, was almost impetuous, the intervals of ease were very short, the pains were very violent, and at the same time most efficient, and the woman was straining every nerve by her own exertions, and all this, too, after a large dose of T. opii. had been exhibited. There was thus everything in favour of the process going on; besides which, there were one or two other no less important points which materially aided,—viz. the immaturity of the child, as she had only completed her eighth month—the woman being well made—her former labours being quick and easy —and its being a twin case—of course this latter point could not be even suspected. It is a curious circumstance, however, that the . greater number of cases in which this form of expulsion has taken place, have been twin cases. Thus every particular noticed by authors as conceived requisite to favour this process, existed in my case. There was a full-sized pelvis—an arm or shoulder presenting —an immature child, or twin case, which amounts to nearly the same thing—powerful and uniform action of the uterus, while the woman was bearing down with all her might—the parts disposed to relax freely, and well lubricated with mucus—and lastly, it was not a first child.

The next point I notice is the treatment of the placenta under a state of *extensive* morbid adhesion. It will be observed, that the ordinary methods recommended in this unfortunate state were each tried, but ineffectually; and that, after some consideration, I determined upon leaving a portion behind, rather than run the great hazard of injuring the uterus. It is to this point especially that I wish to direct your attention; and the question naturally arises, Which method will be attended with least danger.—whether, by perseverance, we are to endeavour to remove every portion of the placenta? or whether, seeing that there is difficulty, we are cautiously to separate the adhering portions from the rest of the mass, and allow them to remain to be thrown off by an after process? My own opinion is, and I have formed it, not from the result of this case, but from the result of other and fatal cases, where an opposite treatment was pursued, that it is decidedly the best practice, if the placenta cannot be removed by moderate pinching, bit by bit, that the *adhering* portions be broken off from the placenta, and left attached to the uterus. I state this most unhesitatingly, as I know that an opposite practice—viz., that of attempting to remove every portion clean from the uterus—is, in a great majority of cases, attended with fatal results. Why this should be so appears to me pretty evident. We are apt to forget, in our anxious endeavours to relieve the patient (who may, perhaps, be flooding copiously at the time), the soft and spongy nature of the inner surface of the uterus. The placenta at its edge may be very undefined and thin—in short, it may be insensibly lost in the walls of the uterus. The adhering portions are also most generally indurated, and we unconsciously— nay, unavoidably—peel off the soft portion which bound the morbid hard parts. Now this, in nine cases out of ten, is the uterus itself, injury to which, I say, cannot be avoided, and must hence be attended with very serious, if not with fatal, results. Indeed, wherever the adhesions are firm and extensive, it is almost impossible, if the uterus is to be preserved entire, to prevent our leaving some portion of the placenta behind. I would therefore recommend, in all cases similarly circumstanced, that it be made a rule of practice, not to be anxious to separate the adhering portions, but to remove so much as can be effected easily, and to leave the firm adhering portions to be thrown off or not, as may be; and my own experience warrants me in saying confidently, that this may be done with a far greater amount of safety to the patient, than if, by continuing our efforts, we succeed in bringing away the mass entire.

This, however, is a practice which by many is looked upon as extremely hazardous, and as placing the patient in imminent peril. But let us examine the danger. How will the case terminate, if a portion of placenta is left in the uterus? Firstly, the placenta may never be discovered; secondly, it may come away without any trouble; and thirdly, it may not come away until some time after, when it will be putrid, accompanied with a fetid discharge, and very

probably with serious constitutional disturbance. The last of these three terminations, as bearing against our principles, is the most important, as there can be no doubt but that now and then portions of retained placenta contaminate the system as with a virulent poison, and place the patient's life in the greatest danger. But, although this untoward result is occasionally noticed, yet it is most encouraging to know that far more often the absorbing power of the uterus is quite equal to the removal of the retained portions, and that at the ordinary period the general health is restored, as well as the uterine function itself. On this point, Rigby, in his medical reports for the year 1834, has collected some remarkable cases. He says, after describing one case :—" The portion of placenta left adhering to the uterus was very considerable, being at least one-third of the whole mass—so large, indeed, that had I not been convinced, not only from my own experience, but also from the numerous facts recorded by Naegele, Salomon, and others, of the absorbent action of the uterus, I should have been induced to pass my hand again, and attempt the separation of this portion ; but I considered myself justified, from knowing these facts, in leaving the case to nature." He goes on to state that there was no fœtor of the lochia, which were sparing ; and it was ascertained, beyond all doubt, that no solid substance had come away.

Collins, in his " Practical Treatise on Midwifery," is very decided on this point, and says :—" When the after-birth is retained by morbid adhesions, it is recommended by most writers to remove as much as can be effected by gentle means, leaving the remainder to be thrown off in the discharges. In this we concur."—And in the detail of cases under the head of " Retained Placenta," Nos. 60 and 100, are practical illustrations of the rule. He took away as much as he could, cautiously, and left the rest adhering, from an unwillingness to use violence. Both patients were discharged on the tenth and eighteenth day respectively.

Burns is no less explicit ; he says :—" If the adhesion of any part of the placenta be very intimate, we must not, in order to destroy it, scrape and irritate the surface of the uterus, but ought rather to remove all that does not adhere intimately, leaving the rest to be separated by nature."

Here, then, are evidences of the safety of the practice, where no bad results followed, and yet where no vestige of the retained portion has ever appeared. But there are still more remarkable cases, where not only a portion, but the whole placenta, has been retained, and perfect recovery followed. The late Dr Young details a case of this description, which is thus related in a manuscript copy of his lectures which I possess :—" The woman had been two hours brought to bed, and all the different methods had been made use of to extract the placenta. The cord was broke. I put the woman on her side, and introduced my hand, but could not get hold of the placenta.

I could get my hand up to it, but no further, the uterus having formed a sort of pouch for it; so that at last I was obliged to trust the matter entirely to nature, and, *what was very uncommon, no fetid stuff came away, nor anything like the placenta*, and yet the woman recovered, and continued in good health." He also notices, what must have occurred to others, as it has to myself, that frequently in cases of abortion, where the embryo has escaped, no membranes or placenta ever appeared, and, in fact, where no trace of these was ever afterwards seen—yet no bad consequences followed. The catamenia in due time returned, and the females became pregnant as usual. There are also cases reported where the placenta has been retained for many days in the uterus, and then expelled with little signs of putrefaction. Denman mentions one which did not pass off for fifteen days, and without any ill consequences. I might bring forward other cases of a similar nature; but these may be sufficient to show, that a large portion of placenta may be left behind with *perfect safety*. This being the case, it is, in my opinion, attended with much less risk to the mother, in cases of morbidly adhering placenta, to leave the portion attached, rather than, by striving to bring it away, to risk the infliction of a positive injury upon the uterus, which will almost certainly terminate in death.

ARTICLE V.—*Contributions to the Pathology of the Heart.* By A. HALLIDAY DOUGLAS, M.D., Fellow of the Royal College of Physicians, Physician to the Royal Infirmary, Lecturer on Clinical Medicine, Edinburgh.—(*Concluded from p.* 35.)

DISEASE of the heart exerts an unfavourable influence on the results of labour only in certain cases; and the favourable or unfavourable result probably depends upon different physical conditions of the heart. This question involves practical considerations of importance; and as the second case referred to at page 31 has proved fatal, after labour, I shall record it in this place, though permission was not obtained to inspect the body.

CASE XV.—*Contraction of the Mitral Orifice; Labour; Hæmoptysis; Sudden Death.*

Mrs Abbot, æt. 26, a spare and delicate woman, the mother of two children, was visited by me on the 14th November 1849, with Dr Buchanan. She was in the fifth month of her third pregnancy, and at the time comparatively free from suffering, though the slightest exertion caused dyspnœa and palpitation; and a protracted attack of profuse hæmoptysis had just ceased.

History.—Symptoms of cardiac disease first attracted attention during the preceding pregnancy—nearly two years previously. Since that time she had been delicate, liable to dyspnœa, palpitation, cough with scanty expectoration, and a sense of epigastric weight and oppression; hæmoptysis had been frequent, and at times profuse of late. Dr Buchanan attended her in her last labour in March 1848, which was natural. She had never had dropsy, so far as she was aware, nor any acute disease ; no rheumatism.

Physical Signs.—The radial pulse was small, contrasting with the impulse of the heart, which, however, was neither forcible nor extended; the *apex cordis* beat in the usual situation, and its impulse was *preceded* by a grating *fremitus* or thrilling tremor. The præcordial space dull on percussion, extended from the third left rib four and a-half inches downwards, and from the mesial line three inches leftwards. The sounds were difficult to analyse, they were free from murmur at the base, and a harsh prolonged murmur existed at the apex. Hepatic dulness on percussion extended to the epigastric space.

Progress.—Labour occurred on the 6th February, and progressed favourably, except that she coughed a good deal ; she was delivered about one in the morning of the 7th, and appeared well and comfortable. Dr Buchanan remained with her for two hours. About four in the morning sudden and profuse hæmoptysis occurred, and she died almost immediately. Dr Buchanan was not sent for, and on the following morning he could only learn that she started up in bed when the attack occurred, and that there had been violent cough and excessive dyspnœa. From November till the date of labour she had not been confined to bed, trifling hæmoptysis had recurred again and again, and she had been unfit for exertion. The child, though premature, was vigorous, and is well.

Remarks.—In the absence of anatomical demonstration, it must be assumed that pulmonary apoplexy was the immediate cause of death; that this arose in consequence of dilatation of the ventricles of the heart; and that the primary disease was contraction of the mitral orifice.

It appears that disease of the heart existed at the time of her previous labour ; and accoucheurs are familiar with a favourable result of labour, notwithstanding the existence of heart disease. The question here is, what difference exists between the favourable and unfavourable cases ? I believe that the progress of Mrs Abbot's case during the last two years was due to a slowly advancing dilatation; and that, in favourable cases, preponderating hypertrophy will be found to exist. Accidents, perhaps, sometimes arise along with minor degrees of dilatation after labour, just as they appear at times to arise in consequence of accidental inflammatory attacks (see pages 448 and 449) ; and it will not be always possible to show how far the result is influenced by the labour.

In Dr Buchanan's patient, Mrs Abbot, as well as in my other case, death was delayed some time after labour, and resulted in a manner not unfrequent in the diseases of the heart,—by *asphyxia* in the former, and by *syncope* in the latter; *both* of which accidents we have seen reason to associate with dilatation. In a case recorded by Dr M'Gowan, on the other hand, death occurred instantly after delivery ; and this may be explained by the extreme degree of dilatation, and the more advanced effects of the heart disease, in connection with a morbid state of other organs.[1]

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[1] As Dr M'Gowan's case is important, I subjoin a condensed account of it,—abstracted from the proceedings of the Edinburgh Obstetric Society, January 10th 1849.

Mrs Baker, æt. 21, was visited by Dr M. on the 16th June 1845. She had spurious labour pains, dyspnœa, pain of the left side, and dropsy ; she was bled from the arm and cupped. Labour occurred on the 20th ; it lasted six hours;

Important practical questions are involved in the management of such cases, on which we are very imperfectly informed. We have not at present to do with their management during pregnancy, but in and after labour. In such an attack as proved fatal in Mrs Abbot's case, were the opportunity timeously afforded, I would be disposed to employ general bleeding, with the view of more speedily disembarrassing the action of the heart, although general blood-letting is ordinarily contra-indicated by dilatation; and the desired relief will be more safely obtained by early and repeated leeching, immersion of the extremities in hot stimulating liquids, &c.

In regard to the management of labour, Dr Simpson expresses a general opinion, that "the existence of disease of the heart is an indication for earlier instrumental interference." This opinion was suggested by Dr M'Gowan's case, and it appears a safe, perhaps a necessary, practice; but I think it is not an unfounded fear, that earlier, unless very much easier, delivery, would not have obviated fatal syncope where disease of the heart was so advanced. Besides, the many prosperous cases which occur show that interference is not always necessary; and in the case of Mrs Abbot, as well as in the one referred to at page 31, the fatal accidents were but indirectly connected with labour, and could have been obviated, if at all, only by treatment subsequent to delivery. In making these observations, I have had in view rather to suggest farther inquiry, than to offer rules for the discrimination and treatment of this class of cases. Our knowledge of the reciprocal influences of pregnancy, labour, and the diseases of the heart, is very inexact; there is especially a want of carefully observed cases.

The influence of hypertrophy and dilatation admits of still farther illustration from other forms of cardiac disease;—cases of which are more familiarly met with than some of those already recorded. Incompetence of the valves is one of the most usual results of acute or chronic disease of the endocardium; but it is a purely physical and accidental effect; and it never proves fatal without the development of hypertrophy or dilatation of the heart.—The exact relation of hypertrophy or dilatation to valvular incompetence, is not well made out; but this question involves speculative considerations which would here be out of place.

In recent acute endocarditis, causing valvular incompetence, the circulation is in many cases less disturbed than in cases in which the valves remain competent, showing that regurgitation is not of itself sufficient to induce a seriously obstructed circulation. But this is still more remarkable in some chronic cases, in which there exists unmistakeable evidence of valvular incompetence without obstruction, or

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the child was still-born, and she instantly expired. On *post-mortem* examination, the heart was enlarged and distended; the right ventricle was very thin and dilated; the aortic orifice was contracted. The left lung was extensively condensed.

even embarrassment of the circulation.   This is well seen in the two
succeeding cases, in which no signs of dilatation existed, and but
slight hypertrophy had occurred.

CASE XVI.—*Incompetence of the Aortic Valves; Chronic Rheumatism.*

James Coggans, æt. 32, a robust labourer, applied to me in April 1845, for
relief of unceasing pain and tenderness in the left temple.   He had none of the
usual manifestations of rheumatism, but said he had had "pains," and had
taken mercury.

On examination, a decided bellows murmur accompanied the second sound at
the base of the heart.   The first sound was muffled, and the space dull on per-
cussion was extended, but little.

He was under observation for two months, during which the signs continued
without change, and he had occasional sense of palpitation.

CASE XVII.—*Incompetence of the Aortic Valves.*

David Macallum, æt. 22, a baker, was admitted into the Royal Infirmary on
the 11th December 1849.   He was spare and slender, but not of unhealthy
appearance, temperate, liable to palpitation on exertion; he had slight cough,
occasional dyspnœa, and alarming dreams.   He said he had been unfit for
regular work for four years, and ascribed his complaints to the effort of lifting
and carrying burdens.

On examination, he breathed easily, and was free of pain; his chest was capacious
and well-formed; the heart's action was excited, with visible pulsation in the
fourth and fifth intercostal spaces.   The pulse was quick in its action, slightly
visible, and compressible; the præcordial space dull on percussion, measured
three inches in the vertical, and in the transverse direction; there was a well-
marked bellows murmur with the second sound at the base of the heart.

He remained in hospital till the 17th January; was languid and indisposed
for exertion, and little benefited by treatment.

The proof afforded by these cases is not complete; still they show
that valvular incompetence, even of considerable standing, is not pro-
ductive of an obstructed circulation.   The signs of dilatation were
not marked in either case; in Macallum I am disposed to associate
the cardiac symptoms, and the increased *transverse* diameter of the
præcordial space, with commencing dilatation and impaired muscular
development.

The following case, one of a class frequently met with, shows how
entirely obstruction of the circulation is wanting in hypertrophy of
the heart without dilatation.

CASE XVIII.—*Cerebral Apoplexy; Hypertrophy of the Ventricles of the Heart; Disease of the Aorta.*

—— Thomson, æt. 50, a robust but intemperate man, was attacked, while
at work, with apoplexy; there was no treatment for three days, and when
brought to the hospital, there was slight febrile action, stupor, and paralysis of
the right side.   Within a year he had had repeated attacks of transient insen-
sibility.   He died on the eighth day of the attack.

On dissection, the left hemisphere of the brain contained in its substance, and
in the ventricle, a coagulum of blood, probably eight ounces in weight.   The
arteries were diseased, though not calcareous.   The heart weighed fourteen
ounces, and had the normal conical form.   The increase of the muscular sub-
stance was chiefly in the left ventricle, the form and capacity of which were

normal. The valves of the heart were competent. In the aorta, near its orifice, there was a dense calcareous excrescence about the size of a filbert ; and the surface of the artery presented many spots of atheromatous degeneration.

This case was equally remarkable for the want of dilatation of the heart and obstructed circulation; and for the accidents which originated in the hypertrophy, excited, it may be, by intemperance.

Besides the preceding cases (XVI., XVII., and XVIII.), in which we have seen that the secondary effects of cardiac diseases, which arise from an obstructed circulation, were wanting in the absence of dilatation, an endless number of cases might be cited, in which the gravest effects of obstructed circulation resulted in connection with dilated hypertrophy of the heart along with valvular incompetence; in fact, it is true of these cases, as we have seen it is in other forms of cardiac disease, that a permanently and fatally obstructed circulation does not occur except in connection with disproportionate dilatation. In illustration of this statement, we may refer to cases I., II., V., VIII., XXI., and XXII.; and from the following case, it appears that a complication so formidable as adhesion of the pericardium with valvular incompetence, is of itself insufficient to cause obstruction of the circulation, except through the medium of dilatation of the ventricles.

CASE XIX.—*Incompetence of the Mitral Valve ; Adhesion of the Pericardium; Hypertrophy ; Dilatation ; Death unexpected.*

John Strachan, æt. 49, a sailor, was admitted February 18th 1845, with the symptoms of obstructed circulation, orthopnœa, œdema, and scanty urine.

History.—His health had been good till within eight weeks, and he had been at work till within four. His symptoms supervened gradually, and latterly he had been much distressed by pain of the belly and exhausting bowel complaint, alternating with constipation.

Physical Signs.—The action of the heart was tumultuous, and the synchronism of the radial pulse, with the impulse, was imperfect ; the impulse was diffused, with a " jogging " movement, to the epigastrium. The præcordial space dull on percussion, measured four inches in either direction. The sounds of the heart were indistinct,—the first accompanied by a soft bellows murmur, which was most distinct at the *apex.* The signs of general bronchitis were also present.

Progress.—Treatment afforded only temporary relief ; and he was not subsequently able to leave bed. Latterly, dropsy increased greatly, and he died unexpectedly on the 3d March.

Post-mortem Examination.—Firm adhesion of the pericardium existed posteriorly near the base; elsewhere the surfaces were free. The heart weighed twenty-eight ounces, was large, globular, and the capacity of both ventricles was much increased. The tendinous cords and the leaves of the mitral valve were thickened, rigid, and opaque. The aorta was slightly dilated, and its inner surface was rough from atheromatous and calcareous deposit. The lungs, and the abdominal viscera, were loaded with blood, and the different serous cavities contained a little dark-coloured serum.

It cannot be supposed that the pericardial adhesion, the endocardial disease, and the hypertrophy, had occurred so recently as, from the history of the case, the symptoms appear to have arisen ; and,

though it is impossible to prove that dilatation becomes dispropor-
tionate only at the date of his first distress, this is not an unreason-
able conjecture, and to that dilatation I would ascribe the train of
symptoms which occurred during his illness. The case illustrates,
in several respects, the relations of hypertrophy and dilatation ;—we
see extreme dilatation superadded to the highest degree of hyper-
trophy ; and, while it is evident that organic disease of the heart
must have long existed, there was up to a late date a complete
immunity from the symptoms of cardiac embarrassment. This cir-
cumstance was probably due to the progressive hypertrophy of the
heart,—at all events, though the connection of these is not capable
of exact demonstration, their co-existence must not be lost sight of.
And in this case we see a farther illustration of what is demonstrated
in case XVIII., that hypertrophy, even of the highest degree, does
not induce obstruction of the circulation, unless dilatation has been
superadded.

The effects which we have now seen to be so intimately connected
with dilatation, have been supposed to arise from a disorganised state
of the muscular substance of the heart. The following case throws
doubt on this supposition :—

CASE XX.—*Incompetence of the Mitral Valve; Hypertrophy ; Dilatation ;*
Fatty Degeneration ; Death by Exhaustion.

James Chalmers, æt. 20, was admitted on the 7th January, 1847. He was
sallow, bloated ; and had been intemperate. He had been suddenly attacked,
four days previously, by pain of the left side, with febrile symptoms. He had
had cough for above two months ; and his general health had been long deli-
cate. Pulse was 100, and irregular ; bowels torpid, and the abdomen tumid
and semi-fluctuating.
Physical Signs.—The impulse of the heart was obscure and undefined ; the
extent of the præcordial space dull on percussion was increased. The first
sound was superseded by a bellows murmur, most marked at the *apex.* In
both dorsal regions the murmur of inspiration was masked by a harsh muco-
crepitating rattle.
Progress.—Steadily unfavourable. Urine was albuminous, constipation
obstinate ; he was much distressed by sickness and pyrosis ; cough did not
abate ; and he sank on the 19th.
Post-mortem Examination.—Volume of flesh was small. The lungs pre-
sented traces of general bronchitis. The heart was increased in bulk, and its
walls were thickened ; the muscular substance was extensively, and in its
entire thickness, converted into a pure adipose tissue. The liver was large,
and fatty. The kidneys were grey, and granular.

The absence of a manifestly obstructed circulation in the preced-
ing case is remarkable ; and the previously languid state of his health
was not more evidently connected with the state of the heart than
with the disease of the liver or kidney.
Hypertrophy is at times in a remarkable manner limited to one
or other of the ventricles, and this may occur without apparent
cause. On the other hand, it appears to arise occasionally in con-

nection with particular forms of valvular disease. There are no cases in which a *limited* or *excessive* hypertrophy is more remarkable than in incompetence of the aortic valves,—as was well shown in Case XXII. ; but it sometimes exists without valvular disease. To this state of the left ventricle may be traced the occurrence of cerebral and other hemorrhages from the arterial system, and the greatly increased vertical diameter of the præcordial space; and possibly the displacement of the *apex* to the sixth intercostal space is due to the same cause—on this point I cannot speak positively, as I have not noted the precise state of the ventricle in the cases in which the impulse of the apex was displaced. Excessive hypertrophy of one ventricle does not prevent its subsequent dilatation; and the other ventricle usually becomes involved, unless a conclusion is put to the case by some of those accidents to which the subjects of hypertrophy are liable.

In many cases in which valvular disease had long existed, symptoms of obstructed circulation arose only a short time before death ; and the progress was steadily and rapidly unfavourable. This fact involves the consideration, already referred to, of the influence of hypertrophy in delaying the embarrassment of the heart's action, until disproportionate dilatation is developed. In cases where there is reason to believe that heart-disease of old standing had existed, without cardiac embarrassment, I have always found hypertrophy of both ventricles, sometimes in very high degree (Case XIX.); though the degree of the hypertrophy did not always bear a precise relation to the absence or delay of obstructed circulation—a minor degree of hypertrophy proving sufficient, in the absence of dilatation, to maintain the equilibrium of the circulation. The necessity of dilatation of the heart, usually involving both ventricles, in order to establish obstruction of the general circulation, is evident from the facts of many cases; but it is also true that a greatly increased capacity of the ventricles in not a few cases fails to occasion obstruction, and in such cases may be frequently seen the influence of acute local inflammations, or other accidental causes, in developing the effects of dilatation, which, in the previously undisturbed state of the system, had not manifested any of its graver effects.

CASE XXI.—*Incompetence of the Mitral Valve ; Hypertrophy of the Heart ; Dilatation ; Pleuro-Pneumonia ; Jaundice ; Death by Apnœa.*

Colin Matheson, æt. 36, a shipwright, admitted 22d February 1847. Of temperate habits. He had a bloated countenance ; general anasarca ; and he suffered much from dyspnœa; cough, with hæmoptysis and sickness. Pulse was 120, and irregular; urine scanty, and slightly albuminous.

History.—He had had good health till three months previously ; and had suffered chiefly from cough, with expectoration, and deep-seated epigastric uneasiness. Swelling of the surface had appeared within a fortnight ; hæmoptysis had occurred, for the first time, within three days.

Physical Signs.—Heart's action was tumultuous ; impulse diffused, and

communicated to the epigastrium; the arterial pulse and impulse of the heart were not synchronous. The sounds of the heart were, in the first instance, confused and faint; subsequently, when the action moderated, a murmur with the first sound, at the apex, was distinct. In both dorsal regions percussion was impaired; the sound of respiration harsh and feeble on the right.

Progress and Treatment.—He derived immediate benefit from leeching, purgative medicine, and repeated doses of opium and ipecacuan powder. Hæmoptysis and dyspnœa did not altogether subside. On the 27th, aggravation of his distress occurred suddenly; with dyspnœa, cough, and vomiting; and jaundice supervened. He sank on the 7th March.

Post-mortem Examination.—Volume of flesh was good; there was jaundice, and general dropsy. The right pleura contained a gallon of turbid serum, and much recent lymph. This lung was compressed; condensed in its lower lobe, from pneumonia; and the middle as well as the inferior lobe contained masses of hemorrhagic condensation. The heart weighed 27 ozs.; it was globular, dilated, and distended. The leaves of the mitral valve were thickened and rigid, as were also the aortic valves—though competent. The endocardium and tendinous cords of the left ventricle, and the interior of the aorta, were atheromatous and rough. The liver was large, and congested. The kidneys were grey, and granular.

In the meantime I shall only direct attention to the recent rise and rapid progress of symptoms in this case, the degree of hypertrophy, and the state of the right lung.

Case XXII.—*Incompetence of the Aortic Valves; Dilatation of the Heart; Hypertrophy; Pneumonia; Death by Apnœa.*

Margaret Forbes, æt. 36, a washerwoman, of full but lax development, admitted 16th March 1848. Much distressed by dyspnœa, pectoral oppression, &c.; no dropsy.

History.—Her health had not attracted her attention till three weeks previously. She was then suddenly, and after exposure, attacked with cough, breathlessness, and hæmoptysis. She had previously experienced occasional disinclination for exertion, and difficult breathing.

Physical Signs.—The pulse was 120, small, and not abnormally posterior to the impulse of the heart, which was diffused and obscure. The præcordial space was extended, and at the base of the heart both sounds were superseded by bellows murmurs. Bronchitic wheezing and mucous rattle accompanied the sounds of respiration.

Progress and Treatment.—She was temporarily relieved after local bleeding; diuretics were ineffectual. Urine became slightly albuminous. Insufferable pectoral anguish recurred with dyspnœa, and fits of approaching syncope. On the 7th of April, after an interval of some days, the symptoms recurred, and she died exhausted on the following day.

Post-mortem Examination.—The heart weighed 17 ozs. Hypertrophy existed chiefly in the left ventricle; both ventricles were dilated. The aortic valves were puckered, and incompetent; the orifice small; and the ascending aorta atheromatous and dilated. The left lung presented the condensation of pneumonia in its lower lobe, both lungs were loaded with blood, and the air-tubes contained much mucus. The liver was fatty, and congested. The kidneys were pale, and fatty.

In these cases we see the grave effects which may result from inflammatory attacks occurring in the train of chronic cardiac disease. In this there is nothing peculiar to heart disease; for we see the same untoward results, from apparently slight causes, in connection with other organic lesions, which may have been previously unmanifested.

There is great variety in the manner in which pulmonary complication is associated with disease of the heart; its influence, however, is, under all circumstances, most formidable, and it demands direct and active treatment. It is not always possible to determine whether the pulmonary lesion originated the existing attack, or whether it arose *late*, and as a sequence of the disordered circulation; but this does not involve any practical difficulty. The complication never exists in a simple form; hence the uncertainty of its indications during life. Bronchitis is rarely wanting, and it has an admitted relation to the disease of the heart as an effect; pleurisy and pneumonia usually co-exist, and the signs of the former more or less mask those of the latter. It is in such cases that blistering is serviceable—subduing pleurisy as well as bronchitis. The chronic affections of the heart itself are not benefited by counter-irritation; but relief of the respiratory function impeded from pulmonic complication, by counter-irritation or otherwise, goes far to diminish obstruction of the circulation.

Decided jaundice does not arise frequently in the progress of diseases of the heart; and, considering the direct influence of the obstructed circulation on the liver in all the forms of disease of the heart, this is remarkable. I do not remember to have met with it, except in Cases I. and XXI.; in both of these cases it occurred shortly before death, and no treatment had any effect upon it.

In former cases it has been shown, that the condition of the right ventricle exerted a powerful influence on the state of the circulation (see Cases IX. and X.); and it has been argued that a patent state of the right auriculo-ventricular communication is a chief cause of the obstructed state of the circulation, which I have been led to connect rather with general dilatation, possibly of *one*, probably of *both*, ventricles. It has been almost established, that a degree of incompetence of the tricuspid valve is not inconsistent with health; and I believe that the higher degrees of widening of this aperture arise only in connection with dilatation of the right ventricle; and, moreover, there ordinarily co-exists more or less dilatation of the left ventricle. It is impossible to attribute the obstruction of the circulation to one of these lesions to the exclusion of the others; but, if one has a primary importance, I believe it is the dilatation of the ventricles.

Valvular disease of the right side of the heart is admittedly rare; I believe, nevertheless, that its frequency has been overrated. Case XIV. is the only one I have met with in which its existence was demonstrated. In another case the physical signs were such as to indicate incompetence of the pulmonic valves; but, in the absence of anatomical demonstration in that case, as well as in all those I have seen described, I cannot affirm that the lesion existed, and the general symptoms in the case were not important.

The physical signs of valvular incompetence require little notice—they are for the most part well understood, though the value of some has been over-estimated. Confusion has arisen from importance being

attached to the character or tone of the endocardial murmurs; their true diagnostic value depends upon two circumstances—the *position* in which they are most distinctly audible, and their relation to the *rythm* of the heart's action. It matters not whether the endocardial murmur be musical, grating, or soft and blowing, with the exception already indicated in contraction of the mitral orifice, in which the characteristic murmur appears to have a *harsh grating* character— (see Cases X. and XI., vol. ix., pp. 1201-4). In illustration of this point, I shall only refer to two cases which have been brought under my notice; in both, incompetence of the aortic valves was attended by a murmur so loud and shrill that it was audible at a distance of several inches from the surface. But the nature or seat of the disease in these cases was determined solely by the *position* and *rythm* of the murmur, which existed, as in all such cases, at the *base* of the heart, with the *second sound*. The musical character or loudness of the murmur was connected with the intensity of the vibration, caused by the regurgitant current, which was accompanied in both cases by a vibrating *fremitus*—a sign not usually observed in aortic incompetence.

The various changes which the pulse undergoes are more intimately related to changes of the muscular substance, than to valvular lesions. There are conditions of the pulse which depend only upon valvular disease; but these may be limited to two—the small pulse of mitral or aortic contraction, and the quick diastolic pulse of aortic regurgitation.

The *visible* pulse is not always an abnormal condition; but, even in its higher degrees, it has no relation to valvular disease. *Irregularity* has been regarded as significant of mitral incompetence; but it frequently exists in cases where there is no valvular disease; and it occurs with mitral incompetence, in such circumstances, as lead me to believe that it arises only in consequence of superadded dilatation.

Want of *synchronism* of the arterial pulse with the heart-beat has a doubtful connection with valvular disease; it does not occur, except in conjunction with more or less dilatation; and I have met with it altogether apart from valvular disease.

Delay of the radial pulse has been stated to depend upon incompetence of the aortic valves; I do not think such is the fact. The radial pulse is naturally more or less posterior to the heart's impulse; and the interval may vary within the limits of health; besides, from the very nature of the thing, it is difficult or impossible to affirm in a particular case that the *degree* of delay is abnormal. From my own observations, I am satisfied that an appreciable increase in the delay of the arterial pulse is very rare; and it does not arise in such a proportion of cases of aortic incompetence as to indicate any relation between them.

Adhesion of the pericardium has been said to manifest itself by a peculiarity of the impulse, which certainly existed in Case XIX.— the impulse communicated to the epigastrium, with an undulating

and "jogging" movement. This state of the impulse accompanies diseases of the heart in which no pericardial adhesion exists; and, in the case of Strachan (XIX.), the dilated hypertrophy and the valvular disease must have influenced the character of the impulse; and besides, how frequently do we find that adherent pericardium only reveals itself post mortem? My own opinion is, that the manifestations of heart disease will arise, in connection with adherent pericardium, only after hypertrophy or dilatation have been superadded, as was observed in the following case :—

A vigorous young man was admitted into hospital, labouring under an attack of malignant confluent small-pox. His previous health had been good. He sank on the 10th or 11th day. The pustules had extended to the mucous surfaces of the air-tubes and gullet ; the *pericardial surfaces* were adherent by firm cellular connections over two-thirds of their surfaces.

In concluding these papers, I have to explain, that it has been necessary to alter the original plan, and thus the cases recorded have been fewer than I at first proposed. There is no real disadvantage in this, as such cases are, for the most part, commonly met with ; and abundant opportunity is thus afforded for verifying the preceding statements.

Part Second.

REVIEWS.

On the Use and Abuse of Alcoholic Liquors in Health and Disease, —Prize Essay. By WILLIAM CARPENTER, M.D., F.R.S., F.G.S., Professor of Medical Jurisprudence in University College. London : 1850. 12mo. Pp. 307.

DR CARPENTER'S Essay we have read with the attention due to the importance of the subject, and the reputation of the author. In the body of the work hardly any point is met with to call forth our dissent. It affords an impressive exemplification of the evils arising from the abuse of intoxicating liquors, accompanied with the most convincing proofs ; a physiological commentary on the uselessness of excessive drinking for the support of severe labour, whether of mind or body ; and a view, on the whole, just of the indispensableness of alcoholic stimulants in the practice of medicine, and of the limits within which the employment of these should be confined. We believe all the world is well convinced that drinking to excess is fertile of evil ; fatal to health of body and mind ; subversive of comfort and well-being ; the most hapless lot to befal the victim's wife and children ; the sharpest laceration to the hearts of relatives and friends ; a real cause to bring the grey hairs of parents with

sorrow to the grave. On texts like these Dr Carpenter's book is an eloquent and instructive commentary. But some one may say with the poet:

> " In causa facili cuivis licet esse diserto."

And there may be readers who will ask if Dr Carpenter was rightly using the great talents with which he is gifted, on a task to which much lighter metal was fully adequate. In this cavil we do not join; yet we could have wished that the circumstances under which the essay was called forth, had been such as tended less to make the author a partizan of particular views. We will only remark, among the results of this partizanship, certainly very unsatisfactory in a physiological point of view, that the term "moderate" is too often used to denote what the world confesses to be "excessive;" and, on the other hand, that all liquors stronger than water are continually clutched up in his reasonings, under the correct but overpowering name of alcoholic liquors, no discrimination of effect being made between the flame of undiluted brandy and the cool freshness of a weak claret; or, as we believe, between the fire of dry Geneva and the froth of small beer.

The essay itself contains not much short of 300 pages; and certainly struck us, in the perusal, as fairly answering the purpose which the author seemed to have in his mind,—namely, the exposure of the mischiefs attendant on excesses in alcoholic drinks. But when we came to read the preface, which, with the privilege of critics, we took last, and to consider the questions to which the Prize Essay was required to furnish answers, we felt constrained to pause in our approbation. We here present these questions, in the first place, to our readers.

" 1st.—What are the effects, corporeal and mental, of alcoholic liquors on the healthy human system ?

" 2d.—Does physiology or experience teach us that alcoholic liquors should form part of the ordinary sustenance of man, particularly under circumstances of exposure to severe labour, or to extremes of temperature ? Or, on the other hand, is there reason for believing that such use of them is not sanctioned by the principles of science, or the results of practical observation ?

" 3d.—Are there any special modifications of the bodily or mental condition of man, short of actual disease, in which the occasional or habitual use of alcoholic liquors may be necessary or beneficial ?

" 4th.—Is the employment of alcoholic liquors necessary in the practice of medicine ? If so, in what diseases, or in what forms and stages of disease, is the use of them necessary or beneficial ? "

The fourth of these questions Dr Carpenter does answer in direct terms in the last chapter of his book; but we hardly think that in treating so exclusively of the effects of the mere excessive use of alcoholic drinks in the previous chapters, he has caught up the spirit which dictated the three first questions. As we interpret these, their purpose is to draw forth an inquiry bearing on the question, whether alcoholic drinks may warrantably be pronounced to rank among man's legitimate enjoyments. Now our author has not, we think, attempted this with any degree of depth beyond what is

current among the ordinary partizans of teetotalism. His book is
taken up with details of the evils of excess; and were this the object
of the inquiry, it would be, as we have already said, entirely success-
ful; and when we find the all-important question at issue disposed
of in a few paragraphs of the preface, and by such an argument as
we are going to quote, we must express our decided dissent. The
argument to which we particularly object is, because · alcoholic
liquors in excess are detrimental, therefore the moderate use of
them must in a corresponding degree be injurious. But our
author shall speak for himself. We quote the whole of the summary
of his conclusions from the preface, though our objections lie against
certain parts of it only.

" In the first place,—That, from a scientific examination of the *modus ope-
randi* of alcohol upon the human body, when taken in a *poisonous* dose, or to
such an extent as to produce intoxication, we may fairly draw inferences with
regard to the specific effects which it is likely to produce when repeatedly
taken in excess, but not to an immediately-fatal amount.

" Secondly,—That the consequences of the *excessive* use of alcoholic liquors,
as proved by the experience of the medical profession, and universally admit-
ted by medical writers, being precisely such as the study of its effects in poi-
sonous and immediately-fatal doses would lead us to anticipate, we are further
justified in expecting, that the habitual use of smaller quantities of these
liquors, if sufficiently prolonged, will ultimately be attended, in a large pro-
portion of cases, with consequences prejudicial to the human system—the
morbid actions thus engendered being likely rather to be chronic, than acute,
in their character.

" Thirdly,—That as such morbid actions are actually found to be among
the most common disorders of persons advanced in life, who have been in the
habit of taking a 'moderate' allowance of alcoholic liquors, there is very
strong ground for regarding them as in a great degree dependent upon the
asserted cause, although the long postponement of their effects may render it
impossible to *demonstrate* the existence of such a connection.

" Fourthly,—That the preceding conclusion is fully borne out by the proved
results of the 'moderate' use of alcoholic liquors, in producing a marked lia-
bility to the acute forms of similar diseases in hot climates, where their action
is accelerated by other conditions; and also by the analogous facts, now uni-
versally admitted, in regard to the remotely-injurious effects of slight excess
in diet, imperfect aëration of the blood, insufficient repose, and other like vio-
lations of the laws of health, when habitually practised through a long period
of time.

" Fifthly,—That the capacity of the healthy human system to sustain as
much bodily or mental labour as it can be legitimately called upon to per-
form, and its power of resisting the extremes of heat and cold, as well as other
depressing agencies, are not augmented by the use of alcoholic liquors; but
that, on the other hand, their use, under such circumstances, tends positively
to the impairment of that capacity.

" Sixthly,—That, where there is a deficiency of power on the part of the
system to carry on its normal actions with the energy and regularity which
constitute health, such power can rarely be imparted by the habitual use of
alcoholic liquors; its deficiency being generally consequent upon some habit-
ual departure from the laws of health, for which the use of alcoholic liquors
cannot compensate; and the employment of such liquors, although with the
temporary effect of palliating the disorder, having not merely a remotely-
injurious effect *per se*, but also tending to mask the action of other morbific
causes by rendering the system more tolerant of them.

" Seventhly,—That, consequently, it is the duty of the medical practitioner to discourage as much as possible the *habitual* use of alcoholic liquors, in however ' moderate' a quantity, by all persons in ordinary health ; and to seek to remedy those slight departures from health, which result from the ' wear and tear' of active life, by the means which shall most directly remove or antagonise their causes, instead of by such as simply palliate their effects.

" Eighthly,—That, whilst the habitual use of alcoholic liquors, even in the most ' moderate' amount, is likely (except in a few rare instances) to be rather injurious than beneficial, great benefit may be derived, in the treatment of disease, from the *medicinal* use of alcohol in appropriate cases ; but that the same care should be employed in the discriminating selection of those cases as would be taken by the conscientious practitioner in regard to the administration of any other powerful remedy which is poisonous in large doses. '

It is at once obvious that the first four of these propositions are designed for the sole purpose of obtaining assent to the preconceived conclusion, that the habitual use of alcoholic liquors, in moderate allowance, is prejudicial to health. But a " petitio principii" very plainly runs through the whole of them. They contain three gratuitous assumptions, at the least :—1st, That if an agent, in two different proportions, prove detrimental to health with corresponding degrees, that it must also act injuriously by cumulative effect, though more slowly and less perceptibly, in a third smaller proportion. 2dly, Because certain diseases of advanced life in this country—some of them bearing a resemblance to one or two of the maladies of warm climates, known to be rendered more frequent and fatal by excesses in alcoholic liquors—occur in the same organ or organs, which are chiefly affected by poisonous doses of alcohol, therefore that these diseases must be chiefly the result of the continued moderate use of alcoholic liquors. 3dly, Because the habitual violation, in a slight degree, of the laws of health is injurious; that the continued moderate use of alcoholic liquors is a violation of the laws of health. These fallacies shelter themselves under the wing of the first of our author's propositions, which carries the appearance of being far more closely applicable to the case than it has any just title to. Were this first proposition put forward as signifying nothing more than that, according to all physiological probability, the specific effects of alcohol, when taken repeatedly in excess, may be expected to be exerted chiefly on those organs which are most usually affected by a poisonous or intoxicating dose, then we should at once admit its truth. In a word, we think it a sound *à priori* conclusion, that the effects of the habitual use of alcohol in excess should be looked for in diseases of the nervous system, of the alimentary canal, of the liver, of the kidneys, and of the other organs on which the influence of a poisonous dose is principally manifested. But we must altogether repudiate the suggestion which this proposition must convey to non-medical readers—namely, that, on just physiological grounds, it is possible to predict that, among the effects of its habitual excessive use, should be such particular diseases as delirium tremens, insanity,

inflammation of the brain or its membranes, apoplexy, palsy, epilepsy, gastro-enteritis, chronic inflammation and hypertrophy of the liver, granular and hob-nail liver, granular degeneration of the kidney, gout, rheumatism, &c. There are grounds on which to predict the organs wherein the diseases resulting from the habitual use of alcohol in excess will probably have their seat, but none on which to define the particular form of such diseases. Thus the conclusion is merely general ; it has no special bearing; and, therefore, it cannot include the case to which our author applies it. It is by experience alone that we come to learn what are the special diseases so produced, and it is by experience alone that we can learn the particular effects, whether beneficial or otherwise, of moderate quantities of wine or spirit taken habitually. There is, in short, no principle, or set of principles, from which, independently of experience, the effect of moderate quantities of alcoholic stimulants on the health can be deduced. Dr C. might, indeed, represent wine as a drug, and ask us to try it by the standard of drugs. Arsenic, he might say, is a substance poisonous in large doses ; known to produce diseases when used too freely in non-poisonous doses, and yet capable of benefiting the health when rightly employed ; and then he might ask triumphantly, if we should not condemn any proposal to employ arsenic habitually, even in the smallest dose ? We acknowledge, that there is no substance, coming strictly under the denomination of a drug, the habitual use of which could be justified. But to term wine a drug would be only another form of begging the question, since the major part of the world still remains convinced, that the fermented juice of the grape is one of the provisions made by a beneficent Providence for man's solace and comfort.

In illustration of the fallacy of the kind of reasoning adopted in our author's second proposition, we cannot help giving an example from a subject with which he is justly entitled to claim an intimate acquaintance. Atmospheric air is fully as essential to animal life as food or water, and this air bears by no means a slight analogy to punch, since it consists of the aërial spirit oxygen, diluted with four parts of inert nitrogen. Oxygen is the part of this compound which is essential to life—so essential that, if an animal be deprived of it, even for no very great number of seconds, it perishes ; and yet, if this animal be put into pure oxygen gas, life is destroyed, at the latest, within twelve hours. Thus, were Dr Carpenter's mode of reasoning applied to determine the probable effects of the habitual breathing of atmospheric air, without the knowledge of any other facts on the subject than that oxygen, when pure, kills, at farthest, in twelve hours, and when somewhat diluted that it produces fatal consequences, after a somewhat longer time, the conclusion would be, that the breathing of atmospheric air should be abandoned, inasmuch as it contains a deleterious ingredient.

It must be confessed that our author labours under a great dis-

advantage in his argument, from the necessity he seems to feel himself under, of bringing his reasonings to bear at once against the whole genus of alcoholic liquors. All that he says is true enough of undiluted ardent spirits. But how can a man argue with any chance of success, when his minor proposition invariably includes things so dissimilar, notwithstanding that they are generically alike, as brandy and table-beer. The worst of it is, that his argument plainly fails to convince himself. He says, were all men truly temperate, there would be no need of total abstinence societies. Does not this remark amount to a confession, that it is possible so to use alcoholic liquors as not to interfere with the health? As we truly believe, not on grounds of argument, but of experience, that there is a very strict limit in the use of wine in reference to bodily health, we have no doubt that Dr Carpenter's opinion is not very far different from our own. We hardly think he could keep himself steady to his argument if he made use of the proper term "wine" as the type of strong drinks. We are almost sure the powerful stimulus of the constantly recurring phrase, "alcoholic liquor," is necessary to keep him to his task, otherwise he would bolt from the course.

The spirit of the questions proposed for answer in the prize essay, directs to the inquiry, whether there be any limits within which the use of alcoholic drinks is favourable to vigour of mind and body? Surely this momentous point is not settled, merely because it is proved that ardent spirits taken habitually in quantities, however small, are detrimental to the health; neither is it settled, because it is proved, that the habitual use of malt liquors, such as ale and porter, to the extent not uncommon in the United Kingdom, is prejudicial to health; for our malt liquors are probably too strong, and certainly are often drank in undue quantity; neither is it settled, because it is proved, that the habitual use of very moderate quantities of the wines generally consumed in this country is hurtful; for these wines are notoriously made strong with brandy to suit the English market. And were these cases set aside as indefensible on the score of health, it has still to be considered, whether the habitual moderate use of wines of natural strength, and the corresponding moderate use of small quantities of much diluted spirit, must also be condemned. Questions like these last are of a kind on which nothing but the general experience of the world can be brought to bear. We admit that the effects of excess have been for a long time more prominent on the surface of society than the effects of moderation; but it is well ascertained, that, for the last half century in particular, there has been a growing moderation in the use of such beverages in every grade of society, and that opportunities now occur daily of ascertaining what is the real influence of the habitual temperate use of strong drinks on the human economy.

We believe we speak the sentiments of the medical profession,

as derived from experience and observation, tempered by sense and judgment, and unmystified by the eager credulity of a temporary enthusiasm, when we say that the habit of taking any kind of alcoholic liquor, without frequent intermissions, is not prudent; that, in particular, no person is temperate who indulges every day in the use of undiluted spirits, however moderately; and that the practice of dram-drinking, in the middle of the day, is most commonly ominous of a premature death by some one of the many alcoholic diseases; that most people may generally indulge in two glasses of port or sherry during or after dinner, with an occasional larger indulgence in company, without forfeiting the character of temperate men; and yet that this moderate allowance should be sometimes suspended for the express purpose of preventing such a habituation to the stimulus as may call for its increase.

We firmly believe, if the beer-drinking servants and labourers of England—no unfavourable specimens of health—be left out of the account, that the occasional moderate indulgence in strong liquors is not the exception but the rule, with the inhabitants of the United Kingdom. There is reason to think, that of the stronger alcoholic liquors made use of in the kingdom, a very great, if not the greatest share, goes to supply, not a habitual, but an occasional consumption. This occasional consumption, large as it must be throughout the mass of the population, attracts much less attention than the habitual consumption by a comparatively small number. The large occasional use, within moderate bounds, of such liquors, points to a field of inquiry on which the partizans of teetotalism completely shut their eyes. The purpose of the Prize Essay under review did not surely confine the investigation to the daily use of alcoholic stimulants. And yet, in Dr Carpenter's book, we seek in vain for information on the occasional indulgence in these. In an inquiry of the kind called for, it will not be said that the moral effects of the social board on the health of the community can be properly overlooked. Surely man's character, as a social being, must exert some reaction on his health as an individual. Does his physical well-being depend so exclusively on the mere measure of his food and drink? Is it not certain that, apart from the society of his fellows, he does not enjoy even an animal health in all its perfection, merely by having his food and drink adjusted to their due amount. His appetite for food, and his powers of digestion, are seldom unconnected with the cheerfulness and flow of spirits for which he is so much dependent on the society of companions. But is it certain that in this phlegmatic land the social intercourse could be sufficiently cultivated and kept up without some aid from exhilarating liquors? The teetotalers will perhaps plead their own example. Are they quite sure that they do not, for the present, owe their power of whiling away their time at their social meetings, without exhilarating liquors, to the mere novelty of their position, the excitement of agitation, and the sense of superiority over the rest

of mankind, which their creed gives them. But this will not last always.

We are far from denying that teetotalism has wrought no small present improvement on the labouring class. But as it rests on a false principle, we doubt its permanence. And on the same ground we dissuade the well meaning from pressing this false principle on the middle ranks of society. All past experience shows, that whenever a false principle has gained ground among men, the final effects of reaction are of the most mischievous character. On the maturest reflection, we feel compelled to pronounce the total temperance movement the creature of a day,—a short-lived enthusiasm,—a bubble that will float a while on the stream of time, but which must of necessity burst ere many years have elapsed, probably long before the living generation has passed wholly away. Time, however, will probably improve the judgment of the leaders, diminish their intolerance, and teach them greater correctness in their sentiments and reasonings ; and thus before teetotalism becomes a mere recollection in history, it may have done much good.

The Treatment of Secondary, Constitutional, and Confirmed Syphilis.
By LANGSTON PARKER, Surgeon to the Queen's Hospital, and Professor of Anatomy and Physiology in Queen's College, Birmingham. London. 1850.

THE first half of the present century has witnessed more extraordinary events and remarkable changes than any similar period in the history of the world. The transition of our own country from war to peace—the revolutionary changes in neighbouring governments—the application of steam power to travelling by sea and land—the introduction of gas lighting—the electric telegraph—and the great improvements which have taken place in almost every art and science, have so altered the condition of human society, as to make it appear like a new state of existence to any one whose recollection extends beyond thirty or forty years. But, amidst all that has contributed to produce this effect, the medical observer can point to nothing, in his sphere, more important than the truths which have been ascertained with regard to the influence of mercury when administered for the cure of venereal diseases.

Thirty or forty years ago, any man who ventured to question the established "Hunterian" principles, would have been regarded as a dangerous compound of ignorance and rashness. Syphilis was held to depend upon a poison which yielded to only one antidote—mercury. If counteracted by a sufficiently early and copious "course," while it had produced mere local effects, such as sores, warts, or phymosis, the patient might escape without further trouble ; but if it advanced to the glands of the groin, so as to excite buboes, an-

other course was requisite ; and if it fairly entered the circulation, there was hardly any limit to the number of courses that might prove necessary. For there being few, if any, textures of the body exempt from the poisonous action, and each suffering in a certain order of succession, while the mercurial influence was limited to remedying the particular derangement in existence, the patient could hardly ever consider himself fairly out of the doctor's hands. However fully salivated for a sore throat, he was exposed to eruptions of the skin ; if cured of these, he might suffer from ulceration of the palate or nose; and so successively from swellings of the testicle, periosteum, and bones, with ulcers of the integuments, and various other local complaints. In the event of this dreadful ordeal proving too much for his strength, and inducing a cachectic state, terminating in death, additional evidence was supposed to be afforded of the danger of syphilis, and the propriety of saturating the system with mercury in the first instance, to prevent contamination.

In those days the " foul wards " of an hospital presented a dismal spectacle—the shocking stench of blue ointment and mercurial fetor — the stifling heat thought requisite for producing a salutary action—and the pale and emaciated spectres, each carrying a spit-box, or having it placed conveniently on the floor, to receive the unceasing distillation from his mouth, as it lay over the edge of his bed,—constituted an assemblage of horrors that deterred from any visitation, except for the most necessary purposes.

The truth at length beginning to dawn, it was supposed that the poison might not be always the same, and that there might be not only a syphilis yielding to mercury, but a *pseudo-syphilis* resisting it. A careful examination of the primary sore was thought to establish grounds of distinction between these two forms of disease ; and the cutaneous affections were also believed to afford further distinctive marks. But, to make more sure of the matter, it seemed the safest course to abstain from exciting the full power of mercurial influence, and employ the drug merely to the extent of producing an alterative effect, which might, though more slowly, not less surely, counteract the syphilitic poison, and not incur the risk of doing harm by vainly contending against its less assailable representative through the use of means possessing a more dangerous degree of potency on the system. Some thirty years ago we were led round the wards of Bartholomew's Hospital, by that wise and good man, Mr Abernethy. Upon reaching the highest floor of the building, and looking along the apparently interminable rows of beds occupied by patients, he stopped, and said, " All the people you see here are labouring under one form or another of venereal disease. Their treatment is very simple, and the same in all. Each of them is taking every day a pint of the decoction of sarsaparilla and five grains either of the compound calomel or blue pill." This was called the *modified* mercurial treatment.

It is needless now to detail or comment upon all the other theo-

ries of syphilitic diseases which have been proposed since doubts
began to be entertained as to the orthodoxy of the old doctrine—
such as, that instead of two, there were three, four, or five different
poisons, each of which produced distinguishable local and general
effects—an idea of much simpler character having, in all sound
and dispassionate judgments, completely superseded every other
speculation on the subject. This was, that the cause of all the dread-
ful effects of syphilis lay, not in the poison, but in the remedy—
that mercury, in short, was the poison, and that multitudes of the
human race had been, through its agency, not only ruined in health,
but even deprived of life. The strong prejudice which existed in
favour of mercury as an antidote to syphilis rendered it very diffi-
cult to test the soundness of such a view by trials in practice; and
we are greatly indebted to the army surgeons, who availed them-
selves of military discipline for enforcing the non-mercurial treat-
ment. It was in Edinburgh that some of the earliest and most
satisfactory experiments of this kind were conducted, at the insti-
gation of the late Dr John Thomson, and it is therefore not sur-
prising that the ancient error should have been sooner dispelled
here than elsewhere. In confirmation of this, we might appeal to
the aspect of the people—whose florid complexions, robust frames,
and nasal features standing out in bold relief, contrast no less
agreeably than remarkably with the pallid countenances, shrunken
muscles, and flattened noses, so rife in some other metropolitan
cities.

With feelings more painful than could be well expressed, we
have heard young medical officers, educated in Edinburgh, describe
the conflict beween duty and conviction, to which they were sub-
jected, by being placed under the command of some staunch
adherent of the old mercurial school. In particular, we are
haunted by the graphic accounts they have given us of the effects
produced on healthy recruits by a few weeks' treatment for
primary sores. The young soldier marching into hospital fresh,
robust, and vigorous—tottering out with feeble steps, pale, ema-
ciated, hardly able to bear the weight of his accoutrements, and
sure, the first night of going upon guard, to suffer from cold in his
throat or skin. Then a second course of inunction and salivation—
a more prolonged convalescence—and, subsequently, affections of
the palate and nose, or deeper-seated textures. Finally, dismissed
the service, to end his miserable existence as a confirmed invalid.

We believed that such sad mismanagement must, in the present
day, be a rare occurrence, and we cherished the hope, founded on
the amount of intelligence now so generally diffused through the
profession, that before long the mercurial treatment of venereal
diseases would be a matter of history only, and not of practice.
In opening the book, of which the title is prefixed to these remarks,
we were led by the position of its author, as hospital-surgeon in
one of the largest provincial towns of England, to expect some tes-

timony opposed to the old fallacy, and confirmatory of a more rational system. It may, therefore, be imagined with what surprise we read the following passage in the Preface :—

"The work I now publish (my third on the same subject) is not an essay on the nature, pathology, or causes of syphilitic diseases, but a clinical account of the best mode of cure. In this country, at least, we know that such diseases are rarely to be cured without mercury ; and even those empirics who advertise a cure without this drug, give it, whilst they condemn it—as an examination of their remedies at once shows."

We read no more, and trust that there are few members of the profession, in this part of the world at least, who have their ideas on the subject so little settled as not to follow our example. We earnestly advise the author to put his practice in commission, and spend a few months here, when we have no doubt of being able to satisfy him that mercury may be safely banished from use as an antidote to syphilis. Indeed, we shall be much surprised if the first act on his return home will not be to make a bonfire of all his three works, and thereby dispel some of the darkness which at present seems to brood over Birmingham.

An Appeal to the Public on Behalf of an Hospital for Sick Children.
London. 1850.

THIS appeal emanates from the Provisional Committee presided over by Lord Ashley, which is at present endeavouring to effect the institution of an Hospital for Sick Children in London. In this object we are confident that the committee will succeed ; and their success will, we trust, instigate the charitable to establish similar hospitals in other large cities.

We beg to refer our readers to the pamphlet itself for the arguments demonstrative of the necessity for such an institution in London, for a refutation of various objections suggested by the recorded mortality of foundling hospitals, and for the opinions of Drs Latham, Watson, Burrows, Locock, Ferguson, and Forbes, upon the advantages to be derived by society at large, from the opportunity for the study of a most important class of diseases afforded to medical men by a well regulated hospital for children.

The Hunterian Oration for 1850. By FREDERICK C. SKEY, F.R.S.
London. 1850.

THE Hunterian Oration is generally a rather dull affair, for it is hardly possible in the present day to say much that is new regarding John Hunter, or to please all the gentlemen assembled to hear the speech or hiss the orator. It appears from the reports in some

of the weekly periodicals, that Mr Skey was not more fortunate than his predecessors in escaping some small amount of sibilation; and that since the publication of his speech, certain passages have been fiercely commented upon, as "insulting to the general practitioners." For our own part, we have read the oration with much satisfaction, and are quite unable to detect the insult which has galled the sensitive few, unless the expression of the orator's opinion, that the present mode of remunerating general practitioners in England is "degrading" to the profession, can be construed into an affront offered to his audience. We need hardly say that the sentiments expressed by Mr Skey on this subject are much in unison with our own, and that we hope ere long to see the general practitioners in England, relieved from what many among them consider a degrading position.

Mr Skey follows the usual course of the Hunterian orators in alluding to recent deaths among the fellows of the London College of Surgeons, paying a richly-deserved tribute to the memory of such men as Mr Clift and Mr Aston Key. The oration is written in elegant language; embodies much sound reflection upon the mode in which eminence in the medical profession should be sought; and if it has displeased (by plain speaking) a few for whose approbation it was probably not composed, will be proportionately relished by those whose good opinion is of more consequence.

Part Third.

CLINICAL REPORTS, LECTURES, ETC.

[Owing to the length of Original Communications, we have been unable to insert a Clinical Lecture this month.]

LECTURES ON GENERAL THERAPEUTICS.

By Douglas Maclagan, M.D., F.R.S.E.

(Continued from page 358.)

Lecture III.—Physiological classification of remedies—Brunonian and Italian theories.

I now set before you, in a tabular form, the physiological classification which I propose to adopt. A great many physiological classifications of remedies have been put forth during the last fifty years, but I do not stop to criticise any of these, nor to explain at any length my reasons for preferring that which I follow. I merely wish you to know, that I do not consider it as having any particular claim to be regarded as philosophical, nor do I mean to defend it as

perfect. I do not know any such thing as a perfect physiological classifica-tion, or one to which many objections may not be offered, and the present one is no exception to this. I adopt it because, for the purposes of teaching, I think it is convenient, and not difficult of comprehension. It is essentially that which was given by Dr Thomas Young, in his " Medical Literature," but on which I have made several alterations, the most important features of the original, however, being preserved :—

<center>CLASSIFICATION OF REMEDIES.</center>

<center>I.—MECHANICAL AND CHEMICAL AGENTS.</center>

A—MECHANICAL.

Acting on the tissues, ...   { Friction. Percussion. Pressure. Instru-ments. Demulcents.

B—CHEMICAL.

Acting on the tissues,	...	...	Cauterants. Caustics.
Acting on the fluids,	...	...	Diluents. Acids and Alkalies.
Altering or destroying external morbific agents, ...		}	Disinfectants. Antidotes.

<center>II.—VITAL AGENTS.</center>

A—INCREASING ACTION.

<center>1. *General in their Action.*</center>

Acting on the sanguiferous system,	...	Calefacients.
— on the nervous system,	...	Nervo-stimulants
— on the absorbent and capillary system,		Liquefacients.
— on contractile fibres, ...	...	Tonics.

<center>2. *Local in their Action.*</center>

Acting on the skin,—

Increasing its excretory function,	...	Diaphoretics.
Exciting local determination or inflam-mation, ...	}	Rubefacients.
Causing discharge of serum, ...	...	Vesicatories.
Causing discharge of pus,	...	...	Suppuratories.
Acting on the nose, ...	...	...	Errhines.
— on the bronchi,	...	...	Expectorants.
— on the stomach,	...	...	Emetics.
— on the bowels,	...	...	Cathartics.
— on the uterus,	...	...	Emmenagogues.
— on the salivary glands,	...	Sialogogues.
— on the kidneys,	...	...	Diuretics.
— on contractile fibres,	...	Astringents.

B—DIMINISHING ACTION.

<center>1. *General in their Action.*</center>

Acting on the circulating system,	...	Depletives.
— on the nervous and circulating sys-tems, ...	}	Sedatives.
— on the nervous system,	...	Narcotics.
Diminishing animal heat,	...	...	Refrigerants.

<center>2. *Local in their Action.*</center>

| Acting on contractile fibres, ... | ... | Emollients. |

Before I proceed, however, to the separate consideration of demulcents, caute-rants, diluents, &c., I have to offer a few remarks in explanation of the gene-ral principles on which this arrangement is founded.

Remedies, you will observe, are divided into the two great sections of— I. Mechanical and Chemical, and II. Vital Agents, according as they produce their effects in virtue of their possessing certain mechanical and chemical pro-perties, or irrespective of these altogether. A single example will suffice to illustrate the distinction between these two sections. A diseased joint may be

cured by the application over it, either of the actual cautery, or of a blister. Both of these remedies act allopathically as counter-irritants, in virtue of certain processes which they set up in the living tissues, and on which their power as remedies depends. But they commence their physiological action in very different ways. The cautery, as its first effect, chars and destroys a portion of the skin, and, if it have not this chemical power, it ceases to be a cautery. The blister has no such chemical action—it does not char or destroy. In virtue of a property inherent in itself, it excites at once the vital action of inflammation of the skin. We place cauterants, therefore, among the chemical, and vesicants among the vital, agents.

The great section of vital agents is again subdivided into two series—those which cause increased action and those which diminish action; and these again are still further distinguished, according as they affect the system generally, or act only on individual organs or textures. In relation to this division into those which increase and those which diminish vital action, I wish to observe that this indicates nothing more than the general fact, that under the action of one set of these agents there is observed to be an increased, and under the other a diminished, amount of vital activity, and that you are by no means to look upon this division as indicating the theory, that the one set of agents act solely in exalting, the other solely in depressing, the vital actions of the body. It must be obvious to every one, that if the action of remedies consisted merely in an increase or diminution of the quantity of action, all those agents which affect the same function or organ of the body, would vary from each other only in degree and never in character; that the only difference we could ever observe between any two remedies would be that one would be more powerful than the other, either as an exciter or a depressor of action. Now, we know that not only different classes of remedies, but different individual remedies of the same class, produce upon one and the same function or organ, effects not merely varying in amount, but differing materially in kind. Let us take narcotics as an example, and compare the symptoms which occur in poisoning with opium and poisoning with belladonna and similar narcotics of the class Solanaceæ. In the case of opium we have the patient rapidly passing into a state of drowsiness, terminating in a peculiarly profound sopor, from which he can with difficulty be roused; and on examining the eye the pupils are found almost invariably to be closely contracted. In the case of the Solanaceæ we have, as an early symptom, frantic delirium, terminating in a torpid condition certainly much allied to, but not identical with, the peculiar sopor of opium poisoning, and we almost invariably find the pupils widely dilated. Now, it is evident from this, that besides a diminution of the energy of the brain and nervous system, produced in common by both the poisons, these agents have the property, respectively, of giving rise to certain variations of the cerebral action peculiar to each, that they therefore do not act merely by depressing, but that while they depress they modify. Thus, then, we are led to admit that there are three ways in which vital agents may produce their effects: they may increase the amount, or they may lessen the amount, of the vital action, or they may change its character; and when they do this last, they are said by modern physiologists to exert an alterant action. I have already told you that it is attempted to explain this by saying that they alter the action by taking part in the vital transformations or decompositions of the tissues; but for this hypothesis we have no warrant either from observation or experiment. I do not need, however, to rediscuss this matter. What I wish you at present to understand is, that when it is said, as for instance by Müller, in his Physiology, that medicines act by an alterative power, it just amounts to this, that they have the property of modifying the vital actions of the system, and in this sense it may be truly said that almost all the medicines we employ are alteratives, for there are very few, if there be any, which, whether they increase or diminish the amount of vital action, do not, at the same time, to a certain extent modify it. I am anxious, however, that you should not

confound the term alterant, or alterative, as you will meet with it in Müller's
Physiology, and similar works, with the term alterative, as you will often
encounter it in reports of the treatment of cases of disease, and in works on
practical medicine.   The physiologist uses the word in a theoretical sense to
express the general physiological fact that many remedial agents produce their
effects by bringing about a modification of vital action in the function or or-
gan affected by them.   The practical physician does not use it in this sense at
all.   You will find him speaking of giving alterative doses of rhubarb and
soda, or an alterative course of mercury, and what he means by this is, that he
is prescribing these medicines in small quantities, often repeated, for the pur-
pose of procuring an improved state of the constitution, and the amendment of
some disease depending upon constitutional causes.   In his language it does
not refer to any theory of the physiological action of remedies, nor does it indi-
cate that there is a distinct class of medicines alteratives, as there are the dis-
tinct classes of cathartics, emetics, &c., but rather points to a particular man-
ner of administering medicines of various physiological actions, so as to obtain
from them, in various ways, the therapeutical effect of a gradual change for the
better, in the system generally.   I call your attention to this double use of the
word alterative, because many persons who are accustomed to hear of altera-
tive doses of mercury, or of rhubarb and soda, are very much puzzled to un-
derstand what Müller and others mean, when in their physiological books they
quote narcotics as an example of alteratives, as they have never heard of such
a thing as an alterative course of opium or hyoscyamus.   You see that this
confusion arises from the theoretical and practical writer having used the same
word to express very different meanings.   I would, in fact, make a present of
the word alterative altogether to the physiologist, for the sole use of his theory,
and banish it from the language of practical therapeutics.   Instead of talking
in this indefinite way of small doses of rhubarb and soda, or of mercury, as
being alterative, let us rather, following the advice which I gave you in last
lecture, endeavour to trace more precisely their mode of action, regard our rhu-
barb as a stomachic, our mercury as a medicine which acts on the absorbent
and capillary system, and that the one by improving the digestive, and the
other the assimilative powers, lead to that improvement in the constitutional
condition which we desire to produce.
     To return, however, to our classification of remedies, let me again point out
to you, that when I divide vital agents into those which increase and those
which diminish action, I do not mean to say that they merely increase or di-
minish, but that, at the same time, they in most cases alter or modify it.
     There have, however, been attempts to explain the action of all vital agents
upon the supposition that they do merely increase or diminish vital action—
that they do not alter its quality, but only its amount, and upon this basis two
renowned doctrines have been propounded, of which, as you will often find
them alluded to in medical writings, I take this opportunity of giving you some
account.   These are the so-called Brunonian and Italian theories of medicine.
     Brunonian Theory.—This, when stripped of the pseudo-Latinity of its name,
means, in plain English, the doctrine of John Brown, who was a teacher
of medicine at Edinburgh, towards the latter end of last century, where he
published a work entitled " Elementa Medicinæ," embodying the peculiar
views which he had taught in his lectures.   The essential parts of his doctrine
are, that all living beings are endowed with a property which he called excita-
bility, and that all vital actions are carried on by various exciting powers act-
ing upon this property of excitability, and producing the state of excitement.
He considered that all living beings were originally endowed with a certain de-
terminate amount of excitability, which was to last them for their life-time,
which, on being acted upon by the exciting powers, is wasted away, or ex-
hausted by them, and of course, when the whole excitability of the individual
is consumed, the exciting powers can no longer act, and life becomes extinct.
When these so-called exciting powers act with moderate intensity, and exhaust
excitability moderately, the condition of the body is that of health ; when,

they act too potently, and exhaust too much of the excitability, a morbid
state is produced, which is indirect debility, or sthenic disease ; when,
on the contrary, the exciting powers act too feebly, and do not exhaust
enough of excitability to maintain health, then the state of disease which en-
sues is one of direct debility, or asthenic disease.   And this, he affirmed, was
true, not merely of the system at large, but of all individual organs.   All the
vital actions, whether general or local, arose from the exciting powers acting
upon them, and exhausting more or less of their excitability—all their diseases
arose from this excitability being too much or too little exhausted—and all
external agents—including, of course, remedies which could affect the vital ac-
tions—operated as stimuli, exhausted more or less of the excitability, and only
differed in the degree in which they did so.   The more powerfully they sti-
mulated, the more powerfully did they exhaust, and if they acted in such a
way that little or nothing could be observed in their action but depression, it
was only because their stimulation was excessively powerful and rapid, and
the exhaustion produced by it was very strongly and very quickly manifested.
Brown seems to have been led to form his doctrine chiefly from observing the
action of alcohol and opium, which, in the beginning of their action, or when
given in small doses, produce a visible stimulating effect, but which, at the
conclusion of their action, or when given in large doses, induce a state of de-
pression.   This he said was exhaustion of excitability, arising from the stimu-
lation which had preceded it.   He was not acquainted with hydrocyanic acid,
or conia, which have been made known to us since his time ; but had he seen
an animal fall at once dead, when poisoned by them, he would have explained
this by saying that they were such powerful stimuli, and consequently ex-
hausted excitability so rapidly, that we could not observe their stimulant action
at all, but only saw the exhaustion of excitability which followed upon it.

Viewed simply as a physiological doctrine, the theory of Brown is open to
several objections.   1st. The whole doctrine of excitability being consumed by
exciting powers and external stimuli, and its not being capable of accumula-
tion or renovation in the system, is inconsistent not only with what is probable,
but with observed facts.   A person thoroughly intoxicated, comatose from
alcohol, has, according to Brown, had his excitability very much exhausted, and
yet we see him ultimately recover thoroughly and completely, without any
appearance of that exhaustion which he is supposed to have undergone, which
there are no means in the system of renovating, and which, therefore, ought to
have left him permanently impaired by it.   2d. To his doctrine that all
remedies operate only as stimuli—on which supposition all those which act on
the same organ or function, can only differ in degree—there is the objection of
the fact already stated to you, that individual remedies of the same class vary
not merely in their potency but in the nature of their action.   The fact is, that
in many instances they differ much less in power than they do in character, as
a moment's glance at the example formerly quoted—narcotics—will show.   We
can see very little difference in power between a full dose of opium and a full
dose of extract of belladonna.   Both are equally capable of poisoning, or, to
speak Brunonially, of exhausting the excitability completely ; but we can
without difficulty recognise a very marked difference in the character of their
effects, for though the ultimate result is the same, the whole train of symp-
toms shows that their course of action is dissimilar.   3d. To Brown's doc-
trine that those remedies which rapidly depress do so by first over-exciting,
there is this obvious reply, that there are many medicines, and those the most
powerful depressors, in whose action we never, under any circumstances, ob-
serve the stage of stimulation.   It is no reply to this to say, that it is there, but is
so rapid that it cannot be seen.   This is merely begging the whole question at
issue.   We must apply to it the Latin proverb, " de non apparentibus et de non
existentibus eadem est ratio."   If this were true, we should always, in the case
of small doses of these depressing agents, be able to observe their stimulant
action, because as they do not then rapidly exhaust the excitability, we ought
to have time to trace their operation n its first stage ; but no one can observe

any stimulation even in the most moderate doses of such agents as hydrocyanic acid, digitalis, and the poisonous gases, such as carburetted hydrogen. On the contrary, all that we can observe with regard to them shows that their whole action, from beginning to end, is one of depression. In short, such remedies retard or weaken vital action, without any previous excitement at all, and they are not stimuli, as Brown chose to call them, but are in reality what they are designated by us, direct sedatives.

Italian Theory.—The unequivocal force of this last objection to the Brunonian theory, may be regarded as having led to the establishment of the doctrine called the Italian theory. It originated with Professor Rasori of Pavia. It is also known as the Contro-stimulant theory, from one of its leading and most characteristic tenets. It is in most respects a modification of Brunonianism, and in common with it ascribes the operation of all remedies only to their causing differences of degree in vital action, and omits all consideration of their having any power of modifying or altering its character. The objections on this point, therefore, which have been made to the original doctrine of Brown, apply to its modification by Rasori, and as has been justly remarked by Dr Pereira, this defect of overlooking altogether the alterative action of remedies, may be considered as being fatal to both hypotheses. Let me point out to you, however, the more special characteristics of the Italian doctrine, especially such as bear a direct application to practical medicine.

Brown, you have seen, regarded all the agents which affect the living body as stimuli, and when they appeared to depress, he said that this arose only from their having previously over-excited. The Italians, on the contrary, say that while many agents act as stimuli, there are others which have a directly contrary action, which, in short, depress without previously exciting, and these last they called contro-stimuli. They do not admit that where there is a lowered state of vital action, this ever arises from mere want of due stimulus ; they allow of nothing negative, but regard all lowered action as due to the positive agency of a depressing cause, which they call contro-stimulus. Thus, then, there are held to be stimulant and contro-stimulant causes of diseases, and there are stimulant and contro-stimulant remedies for them. When a disease arises from excess of stimulus, then whatever cures it is a contro-stimulant ; when it arises from excess of contro-stimulus, then whatever cures it is a stimulant. It must be allowed that this appears to be a very short and simple way of explaining the action of all remedies; but when examined a little more closely, it is found not to offer any real explanation at all. It amounts to nothing more than this, that such and such a remedy is a contro-stimulant, because it cures a disease supposed to arise from excess of stimulus ; and most unhappily for its logic and its pathology, it argues that such and such a disease arises from excess of stimulus, because a contro-stimulant cures it. A remedy is thus a contro-stimulant or stimulant, merely according as the physician regards the disease which it cures to arise from excess of stimulus or excess of contro-stimulus, and as they have not yet been able to give us any definite rules for judging to which of these causes disease is due, we can have no certainty as to whether we are right or wrong in calling a remedy stimulant or contro-stimulant. You will see at once that this puts aside all consideration of the primary or physiological action of remedies ; and it is founded solely on their therapeutic effect, and as we know that the same ultimate therapeutic effect may be got at by a variety of routes,—that diseases of the same general nature, for example inflammatory affections, may be treated in a great variety of ways,—so, viewing the remedies of such diseases merely as contro-stimulants, because they cure a form of disease supposed to arise from excess of stimulus, we get together a jumble of substances of the most dissimilar effect upon the system ; prussic acid and turpentine, white hellebore and cantharides, colchicum and copaiba, being all found alongside of each other in the same order of remedies, merely because they have been found to cure some form or another of inflammatory affection. Do not, therefore, let yourselves be led into the fallacy of supposing that you have got at an ex-

planation of the action of a remedy by calling it a contro-stimulant, because it cures a particular form of disease. It has been attempted, for instance, to explain in this way the action of mercury in inflammations, with regard to the *modus operandi* of which it must be allowed that we are yet very much in the dark. But what better is this than saying that it is an antiphlogistic, and what does this mean but simply to state, in one word, that it does cure inflammation. I again repeat, take refuge in no doctrine which would lull you into a neglect of endeavouring to trace the physiological, as well as ascertain the therapeutical, action of your remedies.

Before we quit, however, the consideration of the term contro-stimulant, as used by the Italians in their therapeutical sense, I must tell you that the word is used by some British authors in a physiological sense, merely to express the primary action of those medicines which lower the activity of the nervous and vascular systems. But I see no necessity for importing this foreign phrase into our nomenclature, when we already have a word which expresses this physiological meaning as well, if not better, and with which no erroneous therapeutical theory is associated. Such remedies were called sedatives, before the doctrines of Brown or of Rasori were heard of; and I shall therefore always use this term when I come to speak of remedies of this nature.

Without, however, enlarging more upon the fundamental theory of the Italians, I shall direct your attention to some further points in their doctrine, with regard to their so called contro-stimulants, which have a more direct bearing on practical medicine. They maintain that these remedies act more beneficially, when they operate without giving rise to any evacuation from the system,—when, in short, they simply and directly act upon the vital powers of the organs that are diseased; and further, that the greater the excess of stimulus present,—that is, the more active the disease,—the greater are the doses of the contro-stimulant remedies which can be borne without danger, or without any sensible evacuation from the body being produced by them. This is expressed shortly by saying, that the amount of violence of the disease gives to the system a power of toleration with regard to the remedy. I shall illustrate this by an example which is a favourite with the Italians, and almost the only one which has met with anything like a cordial reception from British practitioners; I allude to the use of tartar emetic in inflammations, and more especially in inflammation of the lungs. This contro-stimulant, they say, can cure pneumonia best, when it operates, as it were, silently, without producing either vomiting, purging, or sweating, and it will not only cure irrespective of these its ordinary evacuant actions, but it may even supersede the still more imperfect evacuation of blood-letting. Now, to this practice I have no objection to offer, because I believe that it is true in point of fact, as it has been abundantly established by experience. Not that I mean to say that I would reject the lancet and trust for the cure of pneumonia always to tartar-emetic; but I mean to say that it will cure pneumonia alone, and without either vomiting or sweating, or at least without its curative effect being due to any vomiting or sweating which it may have produced,—I say so because I have seen it; and the same thing is true of hydrocyanic acid,—although, from its formidable potency, few practitioners like to use it so freely as they may tartar-emetic. I do not wish you to suppose that, in such cases, when evacuation does occur, as for instance sweating from an antimonial, that this has no share whatever in the cure. All I mean to say is, that the cure may be accomplished without the necessary production of any evacuation. But we do not require to adopt the Italian theory of excess of stimulus as the cause of the disease, and energy of contro-stimulus as the cause of the cure, in explaining its action. The old-fashioned word sedative explains it much better, and when we come to examine its action closely, we shall see that after all the disease is cured very much in the same way, whether we have trusted to the antimony alone, or to the lancet, or conjoined their use. What we want to do in curing the pneumonia may be said shortly to be, to lessen the force with which the heart sends the blood into the inflamed vessels. Now, tartar-emetic

and hydrocyanic acid both have a sedative action on the heart. They lessen the force of its contractions, and therefore, under their use, the blood is propelled with diminished force, and there is no absolute necessity for any of the blood being taken out of the body in the form of any evacuation, the diminished force of the current being enough to obtain the end which we aim at. When, again, we use blood-letting, we get at the same result in another way. We do not perhaps directly diminish the contractile force of the heart, but we take away a large proportion of the blood which it is the heart's office to circulate, and there being less of this vital fluid in the vascular system, the force and tension of the circulation is thereby reduced, and consequently the impulse of the blood into the vessels of the inflamed lung is thereby diminished. In the one case, we leave all the blood in the body, but render the heart less capable of propelling it; in the other, we leave the heart probably as capable of contracting as before, but we give it less blood to propel. The tartar-emetic, or hydrocyanic acid, thus can cure the pneumonia without evacuating. This we are ready to allow to the Italians, without committing ourselves to the opinion that it is a more commendable plan of treatment than by the lancet, but we tell them that these so-called contro-stimulants of theirs are just our old friends the sedatives under a new name.

The other doctrine, however, that the amount of the disease confers upon the system a power of toleration of the remedy is much more questionable. It has led to a sort of practice of a very uncalled for, though in many instances perhaps not of a positively hurtful character, viz., the use of unnecessarily large doses of the medicines. I believe that all the good effects, for the production of which the Italians think such doses as four or five grains of tartar-emetic necessary, may be obtained by a single grain or even less, and these smaller doses are just as apt to cause some vomiting or sweating in a pneumonic case as the larger doses. They may do this to a less extent, but they ought not in a severe case to do so at all; and they ought to do it much more readily in slight cases, if the toleration of the remedy as regards its evacuant actions were proportionate to the activity of the disease. Now this certainly is not observed to be the case. Further, if the toleration were proportionate to the activity of the disease, we ought always to see as the disease declined the toleration of the remedy decline also; and as the patient treated by tartar-emetic gets better of his pneumonia, he ought to be made to vomit and sweat powerfully, by the same doses which he took before the resolution of the inflammation, without producing any such effects. Now this also is observed not to be the case; on the contrary, patients will go on taking doses of tartar-emetic, after the symptoms for which it was administered have quite subsided, without its producing any of these symptoms of intolerance at all, merely from the system becoming temporarily habituated to it. I kept a note some years ago, in relation to this very subject, of the effects of tartar-emetic as regards its evacuant action, in a few cases, and the results were completely at variance with these Italian doctrines. The number of cases of which I kept notes was 27. They were not selected, but were all taken in succession as they occurred in my practice, and consisted of affections which, from presenting symptoms either of inflammation or febrile reaction, were such as would on general principles be appropriately treated by antimony. Of these cases six had neither nausea nor vomiting during the whole course of their treatment; twenty had more or less of nausea or vomiting from the first two or three doses, but none from the subsequent doses—thus exhibiting their intolerance of the remedy at the time when their disease ought to have made them tolerate it best, and toleration of it at the time when from the disease subsiding they ought to have borne it worst; and one only of the twenty-seven afforded any support to the Italian doctrine of toleration by not vomiting at the commencement, but vomiting when the disease was subsiding. I ought to add that of those who did not vomit, one half had evacuations in another form, viz., by copious diaphoresis. In the above cases the doses given were not of that magnitude

which the Italians administer on contro-stimulant principles. But this rather increases than diminishes the force of the argument to be deduced from their observation; for being small doses, their toleration ought to have been the more complete. It may perhaps be said, that these cases were not applicable to a solution of the question, for they may not have been of the kind in which this "contro-stimulant" ought to have been administered at all. I shall not venture to say whether their pathology was excess of stimulus or not, but all that I know is, that they were the kind of cases in which we generally think antimony useful, that the remedy answered the purposes which I expected it to serve, and only one of the twenty-seven cases went wrong, and that I need not be ashamed to own, as it was a very bad case of pneumonia in a woman of advanced age.

There are several other points connected with the Brunonian and contro-stimulant theories which would afford much room for interesting discussion, but as these refer more to their pathology than their therapeutics, I forbear to enter upon them. I have made what you may probably consider to be a rather extensive digression from what was the main subject of our present inquiry, but I have thought it not unprofitable for you to know something of two doctrines which have so recently divided the opinion of the medical world, one of which still flourishes in its own native country, and has, as you see, so far met with a practical adoption here. You will bear in mind that when we entered upon this topic, it was for the purpose of showing you that the action of remedies cannot be satisfactorily explained upon the theory that they act only by increasing or diminishing vital action, but that their modifying or alterant action must also be taken into account; and I have again to remind you that when, in the classification I have followed, I divide them into those which increase and those which diminish vital action, I mean by this to express only the general nature of their operations, and would have it understood that this is in almost every instance accompanied by their modifying or alterant effect.

Part Fourth.

PERISCOPE.

PATHOLOGY AND MEDICINE.

M. PIORRY'S MEDICAL NOMENCLATURE.

M. Piorry brought the subject of his nomenclature before a meeting of the "Académie de Médécine," on the 5th of March last, and as no one offered any observations on it in a medical point of view, he declared that the silence was a proof that no serious argument could be offered in opposition to it. We are, however, inclined to infer from this silence, that the members of the Academy thought discussion on such a subject would be altogether useless, and that the matter must be decided by time and the voice of the profession at large. It must be confessed that M. Piorry's nomenclature has been framed with considerable skill; but whether it be one which is adapted to the present state of medical science, or is likely to be useful to practitioners, is very doubtful. Before criticising, however, it is right that our readers should be acquainted with M. Piorry's views, as well as with the nature of the nomenclature he proposes.

The following is an abridged account of the propositions M. Piorry brought before the Academy, which we shall number for the sake of reference :—

1. The soul is the commencement or origin (*point de départ*) of the organisation ; it is its influence which determines the kind of organisation, the various vital phenomena ascribed to the vital principle, vital properties, forces, &c. &c.

2. The soul, the vital principle, the vital properties, cannot be diseased ; the organs only are susceptible of being so.

3. Therapeutics may influence the organs; but moral means only can influence the action of the soul.

4. There cannot be a functional lesion without momentary or persistent alteration in the solids or liquids. The lesion of an organ, its simple and direct cause, and its immediate effects, constitute the only true idea that can be formed of a disease. The lesion clearly specified, arising under the influence of a cause, and producing a fixed and absolute result, may be considered as an element, a unity, which we term a pathological state.

5. If we look upon a disease in this manner, its individual existence may be admitted ; but by *disease* is generally understood a series of lesions arising in different persons under the influence of various causes, producing multiple effects often very dissimilar.

6. Taken in this last sense, a *disease* cannot be logically admitted, its forms, species, varieties, degrees, &c., are nothing more than numerous pathological states, which coincide in certain cases, and which in others succeed, or are connected with one another in different ways.

7. The collections of symptoms called diseases are completely arbitrary, and vary according to the opinions of every practitioner. Typhoid and other fevers, rheumatism, scrofula, &c., are only collections of pathological states, which, not being fixed, or bearing any relation to,—1st, the lesions observed ; 2d, the number of lesions and organs affected ; 3d, the causes of the organic alterations, —cannot etiologically or pathologically be considered as elementary units to which statistics are applicable.

8. The treatment of diseases as they are at present understood, can never be subjected to fixed rules, nor connected with positive facts. Doubt, indecision, and medical scepticism will always preside over therapeutics founded on such a basis. The determination of the circumstances which require particular remedies, ought to repose, 1st, on an exact knowledge of the pathological states, simple or multiple ; 2d, on an appreciation of the causes which have presided over the development of the lesions; 3d, on the physiological or pathological relations arising among the various organic disorders with which individuals are affected.

9. It is necessary that theory and practice should harmonise ; and since, at the bed-side, we investigate organo-pathology, and not nosology, it is necessary to abandon the study of diseases, and acquire a knowledge of organo-pathological states, both as regards their causes and effects, in their simplicity as well as in their relation to each other.

10. In order to recall always the affected organs, and the manner in which they became deranged, we should endeavour to forget as much as possible of the idea of disease as expressed by a name.

11. Since it is necessary to forget morbid entities, it is no longer proper to employ the names which represent them, whereas it is important to know pathological states, which form the basis of a sound practice ; we must consequently find names for them. Now, as for most of these we have no expressive terms in the old nomenclature, it is indispensable to create new words. These ought not to be synonymous with those appellations which designate diseases; neither is it necessary to alter the ancient signification of the Greek terms, only to substitute for hypothetical and erroneous ideas, true facts represented by just expressions, rendered as correct as possible.

The following nomenclature, then, is the consequence of the organo-pathological doctrine.

ORGANO-PATHOLOGICAL NOMENCLATURE.

Particles that are placed before, and sometimes after, the body of the word.	Signification in the nomenclature.	Name of the organ, or liquid, &c.	Signification in the nomenclature.	Final particles, or terminations.*	Signification of the final particles in the nomenclature.
hyper	high degree.	organo	organ.	isme	regular action.
hypo	feeble degree.	hémo	blood.	pathie, or ia	suffering, disorder.
pan	throughout.	cardio	heart.		
poly	numerous.	pneumo	lung.	topie	place, seat.
mono	one.	pleuro	pleura.	célie	tumour.
a, an	absence of.	gastro	stomach.	morphie	form.
nomo	normal.	entéro	intestine.	trophie	volume, texture
dys	difficult action.	iléo	ileum.	macrosie	large.
dynamo	force.	hépato	liver.	microsie	small.
océo	acute, rapid.	spléno	spleen.	stenosie	contraction, or arctation.
chrono	chronic.	néphro	kidney.		
hydro	water, serosity.	utéro	uterus.	ectasie	dilatation, extension.
aero	air, gas.	ovaro	ovary.		
oxi	oxygen.	péritono	peritoneum.	sclérosie	induration.
chalibo	iron.	encéphalo	brain.	malaxie	softening.
hémo	blood.	névraxo	nervous axis.	traumatie	wound.
udo	sweat.	myélo	spinal marrow.	diastasie	separation.
lipo	fat.	méningo	membranes.	clasie	rupture, fracture
choli	bile.	rhino	nose.	trypie	hole, perforation.
uro	urine.	angio	vessels.	emphraxie	obstruction, embarrassment.
siala	saliva.	adéno	gland.		
blen	mucosity.	ophthalmo and ommo	eye.	hemie ou émie	sanguineous congestion.
galacto, galo	milk.				
scor	faeces.	blépharo	eyelid.	hematosie	bloody?
plastico, plasto	plastic, fibrinous.	oto	ear.	ite	inflammation.
pyo	pus.	arthro	articulations.	crinie	secretion.
toxico, or toxo	poison.	ostéo	bone.	rhagie	extravasation of blood.
septico	septic.	myo	muscle.		
litho	stone, calculus.	ethmo	cellular tissue.	rhée	discharge of white liquids.
helmintho	worm.	phlébo	vein.		
zoo	animal.	phlébartéro	pulmonary artery.	aphrosie	froth.
phyto	vegetable.			kystie	cyst.
chromo	colour.	angioleuco	lymphatic vessel.	eicosie	ulcer.
dexio	right.	angiairo	air-tube.	ostéie	bone.
aricéro	left.	angibrômo	digestive tube.	lithie	concretion.
méta	change.	angicholo	biliary vessels.	phymie	tubercle.
endo	interior.	cysticholo	gall-bladder.	spéie	cavern.
péri	exterior.	angiosialo	salivary duct.	syphilidie	syphilis.
cleitro	division.	angiuro	ureters.	agrie	gout.
stoma	opening, mouth.	angiospermo	spermatic duct.	hematoïdie	erectile.
bromo	nourishment.	angiove	vessels of the egg.	mélanosie	melantosis.
iose	virus.			scirrhosie	scirrhus.
rubio	measles.	élythro	vagina.	encéphaloïdie	encephaloid.
scarlo	scarlatina.	embryo	embryon.	nervie	nervous action.
léprio	lepra.	diaphro	diaphragm.	esthesie	sensibility.
boysiose	cow-pox.	dermo	dermis.	algie	pain.
hippo	horse.	chorio	chorion.	myosie	muscular action, myotility.
mytilo	mole.	thélo	papilla.		
		tricho	hair.	dynamie	power.
		spilos	spot.	sthénie	force.
		psycho	intelligence.	loïmie	pest in general.
				nécrosie	partial death.

When two vowels, or two syllables, come in contact, so that, without altering the sense, one of them can be suppressed, it is good to do so. *Examples :*—Gastrenterite, for gastro-enterite : sialadenia, for sialo-adenie ; hépathie, for hépatopathie ; peritonia, for peritoni-pathie ; anomorphie, for anomormorphie, &c. &c. The letter H should be placed before isme, ite, algie, &c., in the same way that it is placed before èmorrhagie, for hèmorrhagie.

* For sake of uniformity, we preserve the French terminations.

We propose offering a few observations first as to the propositions ; and, secondly, as to the nomenclature.

I. The first three propositions of M. Piorry appear to us to be very vague, and even unsound. Vague, because he seems to have confounded the soul with the vital principle ; and unsound, because all the evidence we are acquainted with is in favour of the idea, that soul is added to organisation already formed, and is not its commencement (*point de départ*). Thus tradition and scripture authority inform us, that man being made, there was breathed into his nostrils the breath of life, and he became a living soul,—that is, soul was added to the organisation. Physiology teaches us that ovulation in the lower animals, which have no soul, is identical in its nature with what occurs in man ; and in him, however difficult it may be to explain when and how the immortal principle is added to matter, it would be more difficult to understand how that immortal principle existed in the ovary anterior to the germ. On the whole, we are inclined to consider that M. Piorry has been mystifying us, in order that his system may avoid the reproach of materialism.

The fourth proposition,—namely, that functional disorders are necessarily dependent on organic changes, evidently lies at the basis of his system, and this is the law with which M. Piorry should have commenced. Disease with him is more or less structural change, and not an assemblage of symptoms. We have no hesitation in saying, that this is the only philosophical view which can be adopted of disease, and modern practitioners have in consequence banished arbitrary nosologies, which are useless, and are waiting the result of investigation to adopt more definite ideas. *In the present state of science*, however, there are many disorders which we are unable to ascribe to organic changes ; and hence, although the general idea may be considered correct, all systems founded upon it must be premature and faulty. Thus we gain nothing by calling an intermittent fever a *splenomacrosis*, because it is by no means established that congestion or enlargement of the spleen is the real cause of that malady.

II. The table of words framed by M. Piorry from Greek nouns and particles, and the method of uniting them to express ideas, must be allowed to be very ingenious. Many of the words have long been used in medicine,—for instance, hypertrophy, atrophy, anemia, anæsthesia, &c. &c., so that the principles on which this nomenclature is framed are already understood and received in medicine. We think, then, that the pains which M. Piorry has taken in constructing the table will be very useful in enabling pathologists to manufacture words at pleasure, in order to express certain changes in particular organs and textures. We do not anticipate, however, nor, indeed, is it at all desirable, that the words in common use should be changed for new ones. But should certain fevers be ultimately shown to depend upon pus in the blood, there will be no harm in calling that condition one of pyohemia.

We ought to separate M. Piorry's peculiar views as to the pathology of certain diseases, from the nomenclature. The former may be erroneous, while the latter may be useful. We subjoin, however, a few of the terms he employs to signify certain organo-pathological conditions, as illustrative of what words must be employed according to this system. They are quoted almost at random from the last four volumes of M. Piorry's work.

Nevritopytis,—Suppuration of the nerves.
Nevraxomicrosis,—Atrophy of the nervous centres.
Nevraxonecrosis,—Gangrene of the nervous centres.
Myosclerosthenia,—Muscular contraction.
Scarliosidermitis,—Scarlatina.
Neurangiuralgia, Neuronephralgia, Neurocysturalgia, Neururethralgia, — Neuralgic pains in the urinary passages, in the kidney, bladder, urethra, &c.
Angiospermostenosia,—Stricture of the seminal ducts.
Angibromemphraxia,—Obstruction in the digestive tube.
Pyoidangiairrhœa,—Secretion of pus in the air passages.

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DIABETES—NEW TEST FOR SUGAR. BY M. MAUMENE.

Several processes have been described by chemists for the detection of sugar, even under the singular circumstances of diabetic disease. Unfortunately none of the processes are of such simple execution as to be readily adopted by the medical profession. I now present chemists and physicians with a test-paper, or rather tissue, by means of which the presence of the smallest quantity of sugar can be detected in an instant.

The action of chlorine upon sugar is very imperfectly known, and the experiments which I have made with the endeavour to throw some light upon this question have made known numerous inaccuracies in the statements made by the most celebrated chemists. Thus, whatever M. Liebig may state to the contrary, chlorine acts, even in the dry state, upon sugar ; it does not require a temperature of 212° to determine the reaction. At the ordinary temperature it requires more time. In all cases there is formed a brown substance, which is partly soluble in water—a caramel, which is of a brilliant black colour when dried. What is obtained with chlorine is obtained as easily, if not more so, with the chlorides, and especially with the perchlorides.

All the sugars behave like cane-sugar towards the chlorides ; they all experience this dehydratation, the result of which is the brownish-black product. And this is not all ; as might have been foreseen, the substances of analogous composition to that of sugar, and which like it may be represented by carbon and water, equally experience the same kind of alteration. Lignine, hemp, flax, cotton, paper, and starch are thus circumstanced.

From these facts we learn the conditions under which we must place ourselves in order to obtain a paper, or rather solid band, coated with a re-agent capable of detecting the presence of sugar. Let us suppose, in fact, a slip of solid substance, which is not altered by the chloride of tin even at a high temperature ; cover this substance with a layer of chloride by immersing it in a concentrated solution and dessication ; then dip the slip thus prepared in a very dilute solution of sugar, and expose it to a temperature of 266°—300° F. The part which has been immersed will immediately change colour, and will become of a brownish-black, more or less deep.

As it is impossible to use paper, linen or cotton, some woollen tissue—for instance, a white merino—may be employed. After having dipped the merino for three or four minutes in an aqueous solution of bichloride of tin (the oxymuriate of commerce, SnCl²,5HO), made with 100 grms. of bichloride and 200 grms. of ordinary water ; let the liquid drain off, dry the merino in a piece of the same substance on the water-bath, and the re-agent is prepared. It is cut into strips like the ordinary test-papers.

By means of this chlorinated merino, the physician will be able, without the least difficulty, to determine whether the urine of a patient contains an appreciable trace of sugar. It will be sufficient to pour one drop of the urine upon one of these strips, and to hold it over a piece of incandescent charcoal, the flame of a lamp or of a candle, to produce in an instant a very visible black stain. The sensitiveness of the test is enormous ; 10 drops of a diabetic urine, added to 100 cubic centimetres of water, furnish a liquid which turns the chlorinated merino completely brownish-black. Ordinary urine, urea, and uric acid are not coloured by the chloride of tin.—*Chemical Gazette*, from *Comptes Rendus*, March 18, 1850.

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ON ANEMIA FROM DIMINISHED PROPORTION OF ALBUMEN IN THE BLOOD, AND ON THE DROPSIES WHICH IT OCCASIONS. BY MM. BECQUEREL AND RODIER.

The following are the conclusions appended to the memoir on the above subjects, published in the " Gazette Médicale de Paris," No. xv., 1850.

1. Besides the form of anemia which results from a diminution in the proportion of the blood corpuscles, we must acknowledge the existence of another

pathological condition, characterised by the low proportion of the albumen of the serum.

2. This diminution of the albumen of the serum may be rapidly produced ; it is then announced by paleness, by a yellowish tint in the complexion, by great debility, and above all by general anasarca, without albuminous urine.

3. A great number of acute dropsies, which at the present time are regarded as special diseases (*essentielles*), ought obviously to be attributed to this pathogenic cause.

4. The diminution in the albumen of the serum may also be *slowly* produced ; it then constitutes a chronic pathological condition, which betrays itself by certain symptoms—the pallor and yellow tinge of the face, extreme debility, and finally general dropsy, more or less considerable, without albuminous urine.

5. The greater proportion of the dropsies which used to be considered *essential* and *passive*, may be referred to the preceding section.

6. Diminution in the amount of the albuminous constituents of the serum, whether produced by an acute or by a chronic process, is quite independent of the diminution of the amount of blood globules. These two alterations of the blood are however very frequently found to co-exist, and sometimes the one, sometimes the other, predominates.

7. A diminution in the proportion of the blood globules is incapable of inducing dropsy, unless associated with diminution in the proportion of the albumen of the serum.

8. The additional symptoms which are superadded to those above mentioned, when diminution of the blood corpuscles complicates the case, are, a " bruit de souffle " with the first sound of the heart, a continuous " souffle " in the jugulars, or an intermitting one in the carotids, dyspnœa and palpitations.

9. The causes capable of determining the slow and chronic loss of the albumen of the blood, are, insufficient alimentation, considerable losses of blood, long continued diarrhœa, the influence of terrestrial miasmata, &c.

10. The production of the same effects under the influence of organic diseases, such as heart affections, or granular disease of the kidney, constitutes a true cachectic condition, a cachexia.

11. The pathological condition to which the term cachectic is generally applied, is nothing but the assemblage of symptoms resulting from diminution of the albumen of the serum, united or not with some diminution in the amount of blood corpuscles. The first of these causes accounts satisfactorily for the frequency of dropsies in such cases, for the discoloration of the skin, and for the extreme state of weakness likewise described. The second explains the " bruits," cardial and vascular, the dyspnœa, palpitations, &c.

12. The preceding distinctions exercise an important influence, and ought to be taken into consideration, both in diagnosis, prognosis, and in the treatment of dropsies.

[MM. Becquerel and Rodier, in the preface to their essay, mention that diminution in the albuminous constituents of the blood, was first observed in connection with Bright's disease, by Drs Gregory, Christison, and Bostock. The accuracy of their observations was confirmed by subsequent analyses by Rayer, Andral, and Gavarret, and the authors of the essay themselves. We cannot subscribe to the whole of the twelve conclusions above given. Acute general dropsy, without albuminous urine, disease of the heart, &c., is, in our experience at least, a very rare affection, and there is, we think, no reason to doubt that organic diseases, obstructing the circulation, may induce anasarca, without the intervention of the cachexia from diminished albumen. But we acknowledge that for the explanation of certain chronic œdematous conditions often observed in the progress of phthisis, during convalescence from typhus, from ague or dysentery, in chlorotic females, &c., the theory of MM. Becquerel and Rodier seems well adapted. We must object to the doctrine which connects the venous murmurs of anemia with diminution of the blood corpuscles,

believing that there is not a particle of physical evidence to justify the authors in adopting it. True, analysis in such cases shows a small proportion of blood corpuscles, but how the impoverished condition of the blood operates in producing the sounds is unexplained, and by chemistry of course inexplicable.]

VENOUS MURMURS IN CHLOROSIS. BY DR CEJKA.

This subject has attracted much attention among modern physicians, and numerous theories have been propounded to account for the production of the venous sounds. Perhaps the most satisfactory explanation hitherto offered is that by Hamernjk of Prague, of which a full account was published in this Journal. (See vol. viii., 1848, p. 753.) Another physician of the same school, Dr Cejka, has since made some additional observations on this subject, and has detected venous murmurs not only in the jugulars (certainly their most common seat) but in the venæ anonymæ and in the crural veins.

I.—In a chlorotic girl of 17 years of age, he heard the usual bruit de diable in both jugulars. On placing the stethoscope over the first intercostal space, on either side, close to the manubrium of the sternum, he distinguished a continuous murmur, audible under the upper portion of the sternum, and from time to time of a clear singing character. As its rythm and force varied on the two sides, it was obvious that two different sounds were heard there. The arterial sounds could be distinctly made out, and separated from those of the veins. Strong pressure upon the jugular caused the suspension of the murmurs under the sternum, slight pressure near the clavicle produced a louder and more musical tone. Cejka believes that the sounds heard in this case, under the sternum, and in the intercostal spaces, were produced in the venæ anonymæ. During the convalescence of the patient the sounds under the sternum ceased, while the bruit in the jugulars continued.

II.—In a girl of 17, presenting well marked symptoms of anemia, a systolic arterial bruit was audible over the course of the pulmonary artery,—over both jugulars a continuous musical sound,—and over the upper portion of the sternum a murmur, referred to the venæ anonymæ. When the patient lay with the legs extended, and the toes turned outwards, if the stethoscope was applied in the course of the crural vein, above Poupart's ligament, and gentle pressure was made over the vessel, about the middle of the thigh, a continuous humming sound, at times musical, became audible. The murmur was quite distinct from the arterial sound, ceased when firm pressure was made upon the thigh below, and seemed to proceed from the crural vein.—*Abridged from Präger Vierteljahrschrift für die Praktische Heilkunde*, 1849, Band iv.

[These may serve as specimens of Cejka's observations. Their accuracy was acknowledged by Drs Hamernjk and Oppolzer, who had the opportunity of examining the cases. Speculations upon the mechanism by which the various venous murmurs are produced are not, in the present state of our knowledge, of much practical interest; we therefore content ourselves with the remark, that the doctrine founded many years ago by Dr Corrigan, upon a number of experiments detailed in the tenth volume of the "Dublin Medico-Chirurgical Journal," affords a plausible explanation. Corrigan found that when fluid, passing from one cavity to another, was in the second relieved from part of the pressure which acted upon it in the first, currents were produced and a bruit thereby excited. If the parietes of a vein are in a state capable of entering into sonorous vibration, and the statical pressure exercised upon them by the blood be for a time diminished, e. g., by a forcible act of inspiration, blood passing into such a vein from vessels where the statical pressure is more considerable, will, according to Corrigan's experiments, produce a bruit. It is not difficult to apply this theory to the " bruits " of anemic and chlorotic patients.]

SURGERY.

RUPTURE OF THE BLADDER.

In lecturing upon a case of ruptured bladder, which followed the usual course, and proved fatal on the fourth day, it appears from the "Lancet" of the 23d March, that Mr Solly of St Thomas' Hospital thus expressed himself :— "Cases of rupture of the bladder, gentlemen, are very uncommon. I do not remember having ever seen a case before, during the twenty-eight years I have been about this hospital. They are almost invariably fatal. I know of only one case on record that recovered. This occurred under the care of Mr Chaldecott of Dorking. It is reported in the 'Provincial Medical Journal' for 1846."

If Mr Solly had honoured the pages of this Journal with his perusal, he would have lately found a notice of two cases, in which recovery followed rupture of the bladder. One of these occurred in Edinburgh, and was originally reported here ; the other was extracted from Mr Rhind's work on "Stricture," as having happened in the practice of Mr Porter. If Mr Solly had looked a little further back, he would also have found, on inquiring into the case to which he has alluded, what must, we think, have satisfied him, that upon that occasion there could not possibly have been any rupture at all, and that the symptoms which had led to the belief in its existence were referable to a temporary suppression of the urinary secretion. For our own part, we do not hesitate to affirm, that a urinary bladder, after being torn, could not in the course of a few hours regain the power of retaining and expelling its contents ; and that the recovery of a patient into the cavity of whose peritoneum the urine had freely escaped, especially without suppuration, is to us equally incomprehensible and incredible.

CURE OF ANEURISM BY PRESSURE.

In the course of some remarks upon a case of popliteal aneurism, in which, after pressure had been tried in vain, the artery was tied, Mr Adams, of the London Hospital, made the following statement :—

"Signorini's tourniquet was applied, but it could not be borne; it was therefore relinquished, and the artery was tied in the usual situation. Now, the application of pressure above the aneurismal tumour, with the view to diminish the impulse of the heart's action, cannot always be employed with security. Thus, at this hospital, about two or three years ago, the sac of an aneurismal tumour gave way during the employment of pressure, and the aneurism became diffused ; gangrene was the consequence, leading to the necessity of amputation. A friend recently related a case, wherein the aneurism, being cured by the pressure, mortification and death ensued, from ulceration of the vein at the seat of pressure."—*Lancet*, 23d March 1850.

OBSERVATIONS ON THE TREATMENT OF CHRONIC CYSTITIS.
BY R. L. MACDONNELL, M.D., MONTREAL.

In a paper published in the third volume of the "British American Journal of Medicine," I drew the attention of surgeons to the great utility of *injections of nitrate of silver into the bladder in chronic inflammation of that organ*, and in support of my views, I adduced some remarkable instances of their successful employment, which had occurred both in my private and hospital practice. It is with the hope of placing this method of treating a disease, hitherto considered incurable, which one of the most eminent surgeons in the world—Sir Benjamin Brodie—considers the "opprobrium of surgery," and says, "there is no disease for which an improved method of treatment is more wanted," in that position in surgery which, I feel convinced, it deserves to occupy, that I have laid the following cases before the profession.

Since my first paper was published, I have cured a great number of persons

affected with this disease, but I have selected the following cases from amongst them, because in them the cure was *solely effected by the injections*, whereas, in some of the others, general treatment was likewise employed ; and in some, the affection of the bladder was complicated with organic change of the prostate gland, with strictures of the urethra, and, in one instance, with urinary fistula and strictures—complications requiring special treatment, and which, some might suppose, assisted in relieving the affection of the bladder ; although, I am quite satisfied, the cures of the vesical inflammation were due to the injections alone. I have also omitted some mild cases of the disease, because, as stated in my former paper, they might have been cured by remedies generally known to surgeons, and, therefore, are not so valuable as evidence in favour of the method by injections. But my principal reason for selecting the following examples is, that we have in them unquestionable testimony of the utility of the practice I advocate,—for in all, general treatment and the usual remedies *had been carefully and perseveringly employed, without success ; and in one, the age of the patient, and the duration of the disease, were most unfavourable for testing the merits of the treatment ; yet in all, the cure was complete and permanent.*

CASE I.—Mr —,—, aged 33, had several attacks of gonorrhœa, which had been cured in the usual manner, and had caused him very little anxiety, except the last one, which was contracted in April 1848, and was soon followed by symptoms indicating inflammation of the bladder. For the latter affection he had been under the care of a surgeon of this city, from May till September 27th, when he consulted me. He then complained of being obliged to make water almost every ten or fifteen minutes during the day, and between twenty and thirty times during the night, accompanied by pain and heat about the region of the bladder, scalding along the urethra, particularly as the last drops were passing. The urine was usually expelled in a jet, and, when allowed to remain at rest, it threw down a copious deposit of pus and blood, and some flakes of lymph ; no discharge from the urethra. He had lost flesh and strength, and had become dispirited and extremely irritable, and his countenance was haggard and anxious. Tongue clean,—appetite good,—bowels regular,—pulse 80, small and weak,—no headach. The sleep being so frequently disturbed by the necessity of emptying the bladder, he rises in the morning languid and exhausted. In order to ascertain the condition of the urethra, a No. 11 (Weiss), bougie was passed, and met with no obstruction, nor was any pain complained of, except as it was passing over the neck of the bladder. The deposit thrown down by the urine was examined under the microscope, and found to be composed of pus and blood globules, epithelial scales, and some crystals of triple phosphate. He was ordered Dover's powder at night.

Sept. 28, six o'clock P.M.—He states that since yesterday, he passed water about fifty times. At six o'clock P.M., I injected the bladder with a solution of nitrate of silver, containing two grains to the ounce, which caused very little pain. Ordered him to take Dover's powder at night, a warm bath immediately, and to drink plentifully of weak tea. 29, one o'clock P.M.—Pain ceased immediately on his entering the bath. He has passed water only four times since six o'clock yesterday, and the evacuation of the bladder is not accompanied by pain or scalding, and the pain above the pubes and in the perinæum has completely disappeared. In all other respects he feels much better, and the countenance has lost the haggard appearance it had latterly assumed. The urine is now clear and devoid of sediment. Barley-water for drink, and warm bath at bed time. Six o'clock P.M.—Passed water only once since last report, and even then, he did so from a feeling that it was not right to allow the bladder to remain distended, and not from a desire to empty it. 30.— Passed water only once between ten o'clock last night and eight this morning. Oct. 1.—Within the last twenty-four hours has made water only three times. 2.—Injected the bladder again to-day with a solution of the same strength, which gave scarcely any uneasiness. 6.—No return of the malady. He can now

keep his water for six or seven hours, and it is quite clear and free from any pus or blood globules when examined under the microscope.

I have seen this gentleman very lately, and he assures me he has not had the least return of his complaint, although he has imprudently exposed himself to wet and severe cold on many occasions since I ceased to attend him.

The following case has been transmitted to me by Dr Shewbridge Connor, physician to the Fever Hospital, Carlow, one of the most eminent practitioners of Ireland, whose testimony must be considered as highly valuable :—

CASE II.—" I attended Mr ——, a respectable farmer some miles from this, whilst he was labouring under fever, complicated with bronchitis. When convalescent, he informed me that 'for years he was obliged to empty his bladder oftener than any one else.' He could not drive a mile without stopping several times. He said that occasionally he passed whitish-looking matter. Warm baths, buchu, and the other usual remedies, were prescribed by me without much effect, perhaps partly in consequence of his persisting to superintend his farm-work in cold damp weather. In October, late one evening, he sent for me, and begged me to bring something to relieve him, as he was obliged to be up every minute, and was suffering intensely all the time. Fortunately, I had read some days previously your paper (*Dublin Medical Press*, Oct. 6, 1847), on 'Injections of Nitrate of Silver in Chronic Inflammation of the Bladder.' No practitioner that I have met, had or has tried it ; but, aware of the power of the medicine in other inflammations, I had no hesitation in acting on your suggestion, and accordingly injected five grains of the nitrate of silver, two drachms of tincture of hyoscyamus, and four ounces of distilled water. The instrument was clumsy and not suitable,—a small brass enema syringe, connected by a piece of bladder with the end of a gum elastic catheter At the moment I could not get a glass syringe. Taking care that the nitrate of silver should remain only a moment in the syringe, I injected it, and compressed the catheter for about a minute or so, to prevent the patient instantly discharging it, which he had a great desire to do. I then withdrew the catheter and left him for the night, having ordered (needlessly, perhaps) flannels, wrung out of hot water, to be applied for some time to the pubic region. Next day he informed me, that he had slept well, and had no occasion to get up for six hours. I pass his door, and meet him once a week at least, and he has never mentioned the subject unless when asked about it, though, at times, he feels a return of his complaint, which is so trifling, however, that he does not like *troubling* the doctor. The long-suffering of the farmer class, when a doctor is to be consulted, is most remarkable in this part of the world.

" Mr —— now travels far by railway—not a very pleasant conveyance for a man with irritable bladder.

<div style="text-align:right">SHEWBRIDGE CONNOR, M.D.,
Co. Fever Hospital, Carlow."</div>

CASE III.—Mr ——, aged 64, of stout plethoric habit, contracted gonorrhœa about thirty years ago, and since then has suffered from the following symptoms :—Pain along the course of the urethra, after sexual intercourse, and after passing water,—great pain over the region of the bladder and in the perinæum,—urine passed every half-hour, and sometimes much oftener. The urine was always fœtid, turbid, and threw down a copious deposit of pus, blood, flakes of lymph, and mucus. At various times, his sufferings have been so great as to keep him confined to bed for months, and he has frequently been attacked with spasmodic stricture, causing retention of urine. According to his own statement, he has consulted medical men in almost every city in North America ; for, being the proprietor of a public exhibition, he has visited the principal cities frequently during the last nine or ten years. He has also passed through the hands of numerous quacks and charlatans. He appears to have derived most benefit from the services of a surgeon in Richmond, N. Y., who advised him to use capsules of balsam of copaiba, which he thinks have kept the disease in abeyance, more than any other treatment. In 1846, he applied

to a surgeon in this city, who gave him buchu and other remedies without any benefit. Between 1846 and 1848 he consulted some eminent practitioners in Philadelphia, but deriving no relief from their remedies, he began, as he says, " to doctor himself with medicine similar to what he got in Richmond, which gave him temporary relief." September 12, 1848.—He consulted me, and in addition to the foregoing symptoms, he complained of pain when he sat down suddenly, but had none on going to stool. The pain on pressure over the bladder was very great, but he had no pain shooting along the course of the ureters or to the kidneys : never passed any calculi. A No. 9 (Weiss) bougie was introduced into the bladder without any difficulty, except near the neck of the bladder, where the passage of it caused some pain. Nos. 10 and 11 passed with equal ease. The urine voided during the visit was examined, and found to contain a large deposit of pus and blood globules, flakes of epithelium, and crystals of triple phosphate ; and, on being tested, the supernatant fluid was found to be highly albuminous. It was also much more foetid than I have generally found the recently evacuated urine to be—even in similar cases. He was ordered to take that night, a draught composed of spirits of camphor, sweet spirits of nitre, and tincture of hyoscyamus, and the next morning the bladder was injected with a solution of nitrate of silver, two grains to the ounce ; and he was advised to take a warm bath and to drink plentifully of barley-water. September 14.—For a few hours after the injection, he was obliged to empty the bladder every half-hour—but towards morning, he could retain his urine for two hours and a-half at a time. The smarting pain in the region of the bladder is much relieved ; no pain over the pubes or in the perinæum. Continue medicines. 15th.—Last night, the weather becoming suddenly very cold, he made water more frequently than he had done during the day, but it was quite free from odour, and presented a healthy appearance. Continue medicines. 20th.—Injected the bladder again to-day, with a solution of four grains to the ounce. 25th.—Injected bladder again, with a solution of the same strength as the last. 30th.—Injected solution, five grains to the ounce. Oct 3.—Repeated the injection. He can now retain his water for six hours at a time, and it is quite free from offensive odour, and clear. 6th.—Injected again. 9th.—Injected a solution of the same strength. He can now retain his urine for seven or eight hours at a time, and, in short, feels no inconvenience from his old complaint.

This gentleman, who had passed several years in a warm climate, spent all last winter in Montreal, which was one of the most severe and coldest that has been for several years, yet he went out almost every day, and did not experience the least relapse, nor does he now, May 20, suffer from the least symptom of the excruciating and exhausting disease he laboured under for so many years, and which he had believed to be perfectly incurable.

CASE IV.—Dr ——, aged 30, in the active practice of his profession, in the eastern townships, consulted me for a severe attack of chronic cystitis, which he had ineffectually attempted to cure by the usual remedies, and for which he had been under the treatment of a physician of this city, for nearly three months, without deriving much benefit. He stated, that, having been exposed to severe cold and wet, during a long drive in the autumn, he remarked, on reaching home, that he had some pain in making water, and heat and scalding along the urethra. Of this he took little notice at the time, but the same symptoms continued unrelieved by the remedies he employed, and were soon attended by an urgent desire to empty the bladder almost every hour ; the urine was passed in jets, and of a turbid whitish colour, throwing down a copious deposit of pus and blood when it had lain in repose for a short time, and he was affected with severe pain over the region of the bladder, and in the perinæum at times, which amounted to agony when riding on horseback, in the performance of his professional duties. He had latterly begun to lose flesh, and irritability of the mucous membrane of the intestinal canal, marked by

frequently returning attacks of diarrhœa, added much to his sufferings. When he consulted me, he was much emaciated, the countenance wore a haggard and anxious expression; the pulse was small and quick; skin harsh and dry; tongue dry, red, and chapped; appetite bad; vomiting frequent, scarcely any food remaining on the stomach, except oatmeal porridge; bowels sometimes confined, but more frequently loose; sleep greatly disturbed by the necessity of frequently emptying the bladder; and his spirits, which before were good, were low and desponding. He was obliged to pass water almost every half hour; and when examined under the microscope, the deposit presented precisely the same appearances that were discovered in the foregoing cases.

I ordered him a combination of mercury with chalk, rhubarb, extract of henbane, and acetate of morphia, all in small doses, to allay the intestinal irritation, and four ounces of distilled water, holding in solution eight grains of nitrate of silver, were injected into the bladder—and he was advised to take a warm bath immediately after the operation. The next day he felt much better, and the improvement continuing, he was not obliged to have the injection repeated. I again saw him last January, nine months after the operation, when he appeared much improved, had gained flesh and strength, and had not the least return of his former malady. I had written to him a few days before his arrival in town, and in reply, I received the following note :—

January 10, 1849.

MY DEAR DOCTOR,—Your note was received, but not so soon as it should have been, owing to some neglect of the post-office. I am happy to comply with your request, to furnish replies to your queries, as to my own case of cystitis. The disease has not returned, nor has it troubled me in the least, since I recovered from the first attack. I did not feel any inconvenience from the injection of the nitrate of silver into the bladder. I am happy to say, I never witnessed a more perfect cure than in my own case.—I remain, my dear Doctor, yours, &c.,

R. L. M'Donnell, M.D.

As the foregoing cases may meet the eye of some practitioner who has not seen my former paper on this subject, I shall make no apology for introducing here the directions laid down in it for injecting the bladder :—" The patient being placed either in the erect position or on a sofa, a gum elastic catheter, about the size of No. 9 or 10 (Weiss) is introduced, and water at the temperature of 98° Fahr., is injected through this into the bladder, by means of a caoutchouc bag, or what I prefer, a syringe, with a 'three-way valve,' by which the fluid can be drawn back from the cavity if necessary. After the bladder has been completely cleansed of any fetid urine and mucus which may be contained in it, the solution of the caustic, being heated to the same degree, is to be introduced in a similar manner, and allowed to remain there for about one minute, care being taken, by compressing the urethra, to prevent its being forcibly ejected by the violent straining that is certain to be induced. The quantity of water or solution should never exceed four ounces, for though the bladder in its healthy state is capable of containing nearly a pint and a-half of urine, without being over distended, yet as the quantity it is capable of retaining in severe chronic inflammation seldom exceeds a few tablespoonfuls, the bladder accommodates itself to its diminished contents, and gradually becomes smaller, and consequently a large injection would act injuriously in two ways —by over-distending the organ, or by passing up into the ureters. In fact, we find it unnecessary to use a larger quantity of the solution than I have mentioned, for it requires some address to introduce even that amount without resorting to force. The patient is then ordered a warm bath, and should the urine become bloody or mixed with shreddy concretions, he should use frequent fomentations and anodynes. But these symptoms seldom last for more than a few hours, and our patient should always be informed that such consequences are likely to be the immediate effects of the operation."

The strength of the injection has seldom tô be increased beyond five grains to the ounce, although in one instance, that of an old gentleman, aged seventy-two, I had to increase the strength *gradually* to ten grains to the ounce before a satisfactory effect was produced. It is, however, always better to commence with a weak solution, which may be made stronger, according to the circumstances of each case, and the judgment of the practitioner. Some of my patients have hesitated about undergoing treatment by injections, in consequence of their advanced age, but though the disease is not in such cases so easily cured, as in the young subject, it is still in the great majority of instances remediable by the same means, as was proved by the great relief obtained by a patient aged *seventy-six*, who was under my care in the Montreal General Hospital, within the last month, into whose bladder I injected, on two occasions, a solution of nitrate of silver, two grains to the ounce. He left the Hospital of his own accord, May 23, quite free from his former complaint.

The Surgeon should, in fact, show his patient that all general treatment and local remedies having failed, he has only two alternatives to choose between— a life of misery and suffering, a burthen to himself, and incapable for the enjoyment of society, or the performance of business—and submission to a plan of treatment, which has been eminently successful in cases equally protracted and aggravated as his own, and in patients equally old and infirm, and who like him had spent time and money, and exhausted their patience, in ineffectual efforts to get rid of a disease so formidable, so excruciating, and so disgusting to themselves and others, as chronic inflammation of the bladder.—*British American Journal of Medicine*, May 1849.

MIDWIFERY, AND DISEASES PECULIAR TO WOMEN.

THE ENTRANCE OF AIR BY THE OPEN MOUTHS OF THE UTERINE VEINS CONSIDERED AS A CAUSE OF DANGER AND DEATH AFTER PARTURITION. BY DR CORMACK.

The paper consisted of three parts :—1. The various effects caused by the entrance of air into the veins, and the appearances found on dissection. 2. Statement of facts proving that the entrance of air by the open mouths of the uterine veins may cause dangerous symptoms, and even death. 3. Suggestions as to the prevention and treatment of such accidents after parturition ; with remarks upon the precautions required in injecting the uterus after delivery for uterine hæmorrhage. The opinion, that the entrance of air into the uterine veins might be a source of danger and death after parturition, had been enunciated by Legallois in 1829, and subsequently by Ollivier ; it had likewise been supported by Dr Cormack in his " Graduation Thesis," published at Edinburgh in 1837. Dr Cormack had attended cases in which air had been drawn into the womb after delivery by the sudden relaxation of the organ, and occurrences of this kind he supposed must be frequent. Dr Cormack quoted Dr Meigs' very graphic description of the way in which air was often drawn in and then expelled with noise by the womb after delivery. Dr Cormack wished to prove that if any impediment existed to prevent the exit of the air which had been drawn in, it must, when the uterus acted, be thrown into the large orifices of the uterine veins, provided they were not secured by coagula, or by the apposition of their parietes from contraction of the organ. He also showed, by anatomical facts, and by referring to the experiments made by Dance, that the communication between the cavity of the womb, and the current of blood in the vena cava inferior, was direct and easy, and that air once introduced into the uterine veins must soon be carried to the right auricle of the heart ; there, if in sufficient quantity, to cause frothing of blood, aeriform distension of the right side of the heart, obstruction of the pulmonary artery, and congestion of the pulmonary capillaries. Cases of this kind had actually taken place. One had been published by Liqnet, and another by Wintrich. A case had also been

published by Dr Bessems, in which air had been thrown accidentally into the uterine veins when injecting the uterus to arrest hæmorrhage. The woman died suddenly with symptoms of suffocation, and the right side of the heart was found distended by air. Dr Cormack showed, by a detail of experiments which he had performed, and also by cases, that the entrance of air into the veins, even in considerable quantity, was not necessarily fatal. A case communicated by Sir B. C. Brodie to Dr Cormack illustrated this fact. The general treatment for uterine hæmorrhage, by inducing contraction of the uterus, also the plugging, would be the means by which the entrance of air into the uterine veins would be prevented. Should the accident occur, and the circulation and respiration become affected, and asphyxia be imminent, it would be necessary to unload the heart and pulmonary capillaries, by taking blood, following up the advantage so gained by aspersion of the face with cold water, the application of stimulating embrocations, sinapisms, &c., and the internal use of various stimuli. Dr Cormack stated, that in a case which he had watched for hours after the accidental entrance of a large quantity of air into one of the veins of the neck, no advantage was got from stimuli till the heart was somewhat relieved by venesection. This is the case which occurred at Barnes in 1848, and an account of the inquest on which appeared at the time in the " Lancet," and " Monthly Journal." In some cases little or no treatment may be required. If the air was in small quantity, it would be absorbed, if the patient survived a sufficient time, and no bad consequences might ensue. At the same time, in some animals experimented on, Dr Cormack found that though they recovered from the immediate danger, they ultimately died from pneumonia. The cases mentioned by Dr Simpson, in a communication to the late Dr John Reid, and published in his collected Memoirs, were examined, and stated to belong to a different class from those of Bessems, Lionet, and Wintrich.

Letters were read from Dr Collins of Dublin, and from Dr Lever of London, to Dr Cormack. The former knew of no cases of death from air entering the uterine veins; the latter had seen three.—From *Lancet's Report of Westminster Society Meeting*, of 23d March.

OPERATION FOR CALCULUS VESICÆ DURING LABOUR. BY M. MONOD.

A woman, aged forty, pregnant for the first time, had been in labour several hours; the membranes were ruptured, the pains frequent, but the labour did not advance, by reason of a large tumour on the anterior wall of the vagina. The tumour was hard to the touch, and completely filled the entrance to the vagina. From its form, position, &c, it was readily recognised as a vesical calculus. A sound, passed into the bladder with difficulty, confirmed the diagnosis.

M. Monod, finding that the operation of lithotrity was inapplicable, at once proceeded to remove the stone by an incision into the walls of the tumour. A curved bistoury, guided by the forefinger of the left hand, was passed into the vagina, and an incision made into the tumour. The stone was removed by the finger only: it weighed nearly three ounces; its surface was irregular, and its form that of a shallow bowl.

The patient had been previously chloroformised, and, as the state of insensibility continued after the removal of the stone, the forceps were employed to complete the delivery. The child breathed, but died in a few seconds, death being attributed to the pressure of one blade of the forceps on the umbilical cord, which was twisted round the neck.

The patient recovered without an untoward symptom. The urine passed by the urethra on the following day. This M. Monod explained by supposing a swollen condition of the edges of the wound produced by the manipulation necessary for the removal of so large a calculus through an aperture so small as he had made.—*L'Union Médicale*, and *Med. Gazette*, Mar. 29, 1850.

GANGRENE OF THE VULVA. BY M. MONAT.

Cases of this nature are not extremely uncommon as occurrences after labour at the full time, but they are in the highest degree rare, at least in the adult, as cases of spontaneous disease, or as a consequence of abortion in the early months of pregnancy.

A young woman, after a miscarriage, without any known cause between the second and third months, was seized with violent inflammation of the labia. In spite of assiduous treatment with local emollients, leeching, &c., gangrene came on at the third day. The labia majora were both completely destroyed. The patient soon recovered.

Sometimes this disease is epidemic. Such was the case in Lyons this winter. Six cases are recorded in the " Gazette Médicale de Lyon," where gangrenous ulceration of the vulva, vagina, or uterus came on after delivery. In 1815, and again, 4 years afterwards, the disease was epidemic in the Hôpital de la Charité. —*Gazette des Hôpitaux*, March, 23, 1850.

TWINS OF DIFFERENT COLOURS. BY DR CARTER.

" The negro woman Winny is 23 years old, of good constitution, and as black as the ace of spades. She has born three children previously to this labour. She says, that in April 1848, she had connection with a white man, and on the following day with a black one. About a week or ten days elapsed, when the catamenia failed to appear. In February 1849, about the middle of the month, she was delivered of twins, the dark coloured child being first delivered, and afterwards the mulatto. The children are robust ; one of them is a mulatto, and the other as dark as negro children generally are. The woman is certain they were begotten by different fathers, and this is the conclusion to which all have come who have seen the children."—*Philadelphia Medical Examiner*, N. S., vol. v. p. 523, and *Brit. and For. Med. Rev.*, April 1850.

REMARKABLE LENGTH OF CORD. BY DR NEUGEBAUER.

After a natural labour, the funis was found coiled round the child's body *six* times. It was of normal structure, but very thin, and is supposed by the author to be the longest on record. It measured 67¼ Schleswig inches (1·653 metre). Busch, in 2077 births, found only four examples of the funis measuring from 40 to 46 inches. Osiander mentions one of 50 inches as a most rare occurrence. Siebold indicates one of 52, Michaelis one of 53, Baudelocque one of 57 ; one of this last length having also been observed once in 12,329 births, at the Prague Lying-In-Institution. The longest, prior to the present one, was indicated as measuring 60 inches, by Michaelis.—*Casper's Wochenschrift*, 1849, No. 41, and *Brit. and For. Med. Rev.* April 1850.

SAVINE IN THE TREATMENT OF HABITUAL ABORTION. BY DR METSCH.

When the disposition to abortion is dependent upon a diminished vitality of the uterine system or functional weakness of its nutritive vessels, Dr Metsch says that medicines of a stimulant and strengthening description, acting powerfully upon the circulation of the organ, are indicated, and of all such substances *savine* is that which is most to be relied upon for this end. Of course so powerful a drug requires skilful selection of appropriate cases for its employment, or it may give rise to hyperæmia of the pelvic and abdominal organs, inducing hemorrhage, inflammation, abortion, or death itself. Local or general plethora, or serious disease of any part, contraindicate its use. An infusion is made by adding from two to four drachms to six ounces of boiling water, a spoonful being given morning and afternoon during the intervals between the menstrual periods. On some occasions, before commencing with it catarrhal or gastric disturbances have to be allayed, as also irritation dependent upon congestion, rheumatism, or disorder of the nervous system. Small general or local bleedings, emetics, aperients, tepid baths, or friction of the surface are re-

quired in different cases. So too regulation of diet, abstinence from sexual excitement, rest in the horizontal position as long as pain is present, are then indicated.

If the disposition to abortion depends upon an augmented irritability and contractility (a condition not always opposed to the first named), the savine does not alone suffice, but a medicine is required that exerts a special effect in regularizing uterine irritability, the *ergot of rye*, which should be added to the savine infusion in the proportion of one to two, when former miscarriages have been induced by the primary contraction of the womb without preliminary hemorrhage. Another modification in the prophylaxis is to be made when former abortions have been attended with great urinary irritation, in which case six drops of *tr. lyttæ* should be added to each dose. When, prior to former abortions, there has been great disturbance of the digestive organs, very small doses of *ipecac.* may be alternated with'the above.

The savine has also been found useful in various chronic diseases of the female genital organs, connected with vascular and secretory torpor, especially in passive hemorrhages and leucorrhœa. In the same way it is of good service, conjoined with mechanical means, in treating prolapsus uteri consequent on frequent or difficult labours and abortions.—*Zeitschrift für Geburtkunde*, Band xxvi, pp. 339, 355, and *Brit. and For. Med. Rev.* April 1850.

ALBUMINURIA DURING PREGNANCY. BY M. BLOT.

In an inaugural thesis by M. Blot, on this subject, we find the presence of albumen in the urine noted in 41 out of 205 cases. Of the 48 cases collected by the author, only 7 had convulsions, and the quantity of albumen in these cases was not greater than in the other cases. In six autopsies of pregnant women with albuminous urine, the kidneys were quite healthy in three cases ; in the other three cases the appearances were those assigned by Rayer to the third degree of Bright's disease, viz., volume and weight a little augmented, cortical substance of a uniform pale rose, or slightly yellow colour, rather enlarged, especially between the pyramids ; slight injection of mucous membrane of pelvis ; no adhesion between capsule and substance, &c.—*Gaz. Méd.*, March 9, and *Med. Times*, March 30, 1850.

Part Fifth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Session XXIX.—Meeting IX.—*March* 20, 1850.—Dr John Gairdner
in the Chair.

CICATRICES IN THE LUNGS.

Dr W. T. Gairdner produced a number of specimens and drawings, illustrative of the effects of tubercular softening, ulceration, pulmonary apoplexy, and gangrene in the lungs. When cure followed any of these lesions, the appearances found after death were so nearly identical, that, from simple inspection of the parts, it was often impossible to draw any just conclusion as to the nature of the disease under which the subject had originally laboured. Dr W. G. expressed his belief, that some specimens, generally regarded as

illustrative of bronchial dilatation, were, in fact, examples of cavities resulting
from gangrene or ulceration of the lungs.

Dr Bennett fully agreed with Dr Gairdner, that in the lungs, as elsewhere,
problematical appearances were often found. To solve the doubt in such cases,
it was necessary to associate the history of the symptoms during life with the
lesions observed on dissection. Cretaceous concretions were not exclusively
observed in the lung after the removal of tubercle ; any deposit might become
loaded with salts, and dry up. The position of such concretions often afforded
some clue to their probable origin. There were, however, intermediate cases,
in which the precise nature of the lesion could not be made out, even with the
assistance of the microscope.

POISONING BY ARSENIC.

Dr Douglas Maclagan produced three stomachs, in which arsenic had been
detected. Although several months old, and not kept in any preservative fluid,
they were still of firm consistence, and tolerably fresh. Dr M. took occasion
to comment upon the facility with which any party could at present purchase
arsenic, and upon the necessity which existed for some legislative enactment
to limit the sale of this most dangerous poison. He was not sure if this was
the proper place to discuss such matters ; but, if permitted, he would shortly
bring forward a communication upon the subject of the sale of poisons.

The *President* was of opinion, that such a communication would be quite in
accordance with the objects of these meetings of the Society.

MEETING X.—*April* 3, 1850.—JAMES SYME, Esq., President, in the Chair.

ERYTHEMA NODOSUM.

Dr Begbie read a communication on erythema nodosum, and its connection
with the rheumatic diathesis, which will appear among the Original Communi-
cations in our June Number. After some remarks upon the advantage of studying
the symptoms which indicate the morbid state of organisation on which diseases
depend, and which are apt to be neglected by the superficial observer, Dr B.
proceeded to describe the eruption and course of erythema nodosum. He then
detailed some very interesting cases from his own practice, in which the appear-
ance of the eruption was preceded by a state of general cachexia, resembling
that which is observed before an attack of rheumatism. In some of the cases
there were deep-seated pains in the limbs and joints, and, in the course of the
disease, abundant acid perspirations, and deposit of lithates in the urine. The
sulphate of quina had been recommended by Dr Watson as useful in erythema
nodosum, and in Dr Begbie's practice it had always proved efficacious. The
use of bark in rheumatism had been long ago recommended, and still had its
advocates among the best informed physicians of the day. The connection
between the skin disease and rheumatism was inferred, 1stly, Because erythema
nodosum, rheumatism, and the rheumatic diathesis, are most frequently, if not
exclusively, confined to the young and those under thirty years of age. 2dly,
Because these diseases are frequently associated with disorders of the menstrual
function. 3dly, Because a disordered state of the general health, characterised
by pallor, cachexia, and defective excretion, precedes the eruption, and is subse-
quently developed in febrile excitement, pains in the joints and muscles, and
copious lithic urinary deposit—symptoms all common in rheumatism. 4thly,
The erythema is often associated or alternates with rheumatic fever, and is
often complicated with those internal disorders with which rheumatism is
allied, particularly pleurisy and pneumonia. 5thly, Remedies of reputed effi-
cacy in rheumatism, such as quina, are equally efficacious in erythema nodo-
sum. Dr B. pointed out the practical importance of bearing in mind the con-
nection which seemed to exist between these diseases, and, in particular, of not
neglecting the disordered state of the digestive and assimilating functions—
often the only departure from health which the physician is called upon to

treat for days, or even for weeks, before the appearance of erythema, or the occurrence of a paroxysm of acute rheumatism.

The *President* remarked, that some of the most useful applications of remedies had been originally determined by chance ; thus, Dr Watson stated, that he did not remember what induced him to prescribe quina for erythema nodosum ; and quina was now the approved remedy.

Dr *Maclagan* concurred with Dr Begbie in thinking, that the disease was not exclusively confined to females, and not necessarily connected with disturbance of the menstrual function. The sulphate of quina, in combination with a mineral acid, was the best remedy. He was not prepared to go so far as Dr Begbie in admitting premonitory symptoms of rheumatism ; it certainly was not preceded by constitutional disturbance of the same marked character which ushers in a paroxysm of gout.

The *President* remarked, that his idea of the predisposition to rheumatism amounted to this, that a person in sound health might expose himself with impunity to cold and moisture ; but that the same degree of exposure would induce acute rheumatism, or acute inflammation, in a person in less robust health.

Dr *Bennett* thought there was something indefinite and hypothetical in Dr Begbie's description of the diathesis common to erythema nodosum, to certain local inflammations, and to rheumatism.

Dr *Begbie* admitted that the early symptoms of the rheumatic diathesis were trivial, and were liable to be overlooked both by patient and physician ; still he maintained, that a state of deranged health necessarily preceded the acute attacks of rheumatism, and was characterised by pallor, indigestion, and loaded state of the urine. This derangement it was which rendered certain individuals liable to severe illness, after exposure to cold and wet. The nature of the illness so induced—whether acute articular rheumatism, pleurisy, or pericarditis—was, in his opinion, always the same ; it was the local manifestation of the rheumatic diathesis. Next to rheumatism—which he regarded as the most fruitful source of pleurisy and pericarditis—he was inclined to rank the pernicious influence of granular degeneration of the kidney.

<center>ANÆMIA AND GOITRE.</center>

The *President* informed the society that there was at present, in his female ward in the surgical hospital, a very curious example of the complication of anæmia with bronchocele, and prominent eyeball, which was described by Dr Begbie, in a communication read to this society, in January 1848. The patient —a girl from Shetland—had been exceedingly exhausted by frequent menorrhagia and diarrhœa, as well as by depletion effected by medical means. Although now convalescent, she still presented the following symptoms, which, it appeared, had existed for many months :—Pale, sickly appearance ; considerable swelling at the root of the neck, evidently depending upon a uniform enlargement of the thyroid gland ; the extraordinary prominence of eyeball ; palpitation ; and humming sound at the neighbourhood of the great vessels of the neck. He invited members to visit the patient, and satisfy themselves of the accuracy of his description of the case.

Dr *Begbie* remarked, that the cause of the prominence of the eyeballs was still disputed—many, like Mr White Cooper, denying that any increase in the dimensions of the eye took place ; but supposing that relaxation of the muscles in and around the orbit permitted the eye to project. He himself held the contrary opinion ; and Dr Hamilton and Mr Walker, who had examined Mr Syme's patient, thought that the eyeballs were enlarged from some increase in the quantity of the vitreous humour. The sclerotic felt firm and tense ; Mr Walker believed it was thin.

Dr *Bennett* could not accept this explanation. If the quantity of vitreous humour was disproportionately large, vision would, undoubtedly, be interfered with ; yet, in these cases, vision was unimpaired.

The *President* said, it was very difficult to pronounce with confidence an opinion as to the enlargement of the eye. After the operation for strabismus, the affected eye sometimes assumed an appearance of plumpness and prominence agreeable to the vanity of the patients, who had even been so gratified with the change as to request to have the operation performed on the other eye. He had not been able to satisfy himself as to the existence of enlargement of the eye in his patient.

CASE OF "WHITE BLOOD."

Dr Bennett mentioned, that there was at present, in the male clinical ward, a boy affected with extreme enlargement of the spleen. On examining a little of his blood microscopically, a very large amount of corpuscles was discovered, quite undistinguishable from pus corpuscles. There were many features of interest in this case; it was the second of the kind which had fallen under Dr B.'s observation, and he proposed, at some future period, to lay before the profession the conclusions to which it led. Meanwhile, any member of the society had an opportunity of examining the case in the Infirmary.

EDINBURGH OBSTETRICAL SOCIETY.

SESSION IX.

MEETING IV.—*March* 13, 1850.—Dr ZEIGLER in the Chair.

CASE OF SUDDEN DEATH AFTER DELIVERY. BY DR BUCHANAN.

The unfortunate patient whose case I am about to relate, died after giving birth to her third child, on the 8th of February 1850. She was 26 years of age, of feeble habit of body, pale, and of rather sallow complexion; had never been subject to rheumatism; had evinced no disposition to dropsy, with the exception of slight œdema of the feet; and never had any acute disease.

I delivered this patient of her second child in March 1848. She made no complaint at that time which would have led to the suspicion that she laboured under disease of the heart. Her labour was comparatively easy, and she had a good recovery. For the next four months she continued well; she then became affected with a troublesome cough, expectoration tinged with blood, painful dyspnœa, and palpitation of the heart; its beats were not regularly transmitted to the pulse, which was also irregular; its action was attended with harsh bruit, heard most distinctly at the apex, and less so, under the left scapula,—from all which symptoms I inferred disease of the mitral valve. I now learned that during the four months preceding her confinement she had suffered occasionally from dyspnœa on exertion. She went to the country the following summer, and returned much improved, but was never again able to resume many of her domestic occupations, and more than once brought on attacks of hæmoptysis by infringing the directions given to avoid all over-exertion. During 1849 my attendance upon her was frequent, and I remarked in her symptoms a steady progression to the worse, which, on learning that she was again pregnant, gave me rather anxious anticipations as to the result; these were no way diminished by soon finding her affected with profuse and protracted hæmoptysis.

In November last, having requested Dr Douglas to see her, we found her in the following state:—The heart's impulse was preceded by well-marked fremitus or thrilling tremor, and neither forcible nor extended; its apex beating in the usual situation. The sounds were confused and difficult to analyse. There was a well-marked harsh and prolonged murmur at the apex; at the base the sounds were obscure, but free of murmur; the præcordial dulness on percussion extended four and a-half inches downwards from the third left costal cartilage, and from the mesial line three inches towards the left. The hepatic

dulness extended into the epigastrium. She had experienced epigastric oppression, but had no tenderness in that situation. Dr Douglas agreed in the opinion that the mitral orifice was the seat of disease, adding that he considered the right ventricle to have become dilated.

About nine o'clock on the evening of the 7th February she became poorly. I found her up and walking about the room, and her respiration free from embarrassment. When the os uteri became fully dilated, I ruptured the membranes ; the head of the child descended on the perinæum, and not being long detained, there was no occasion for instrumental interference. The child was born at half-past twelve ; her labour had been quick, and, as in the former instance, comparatively easy. During the latter part of it she had occasional cough, but her pulse was more regular and better than I had observed for a considerable period. I remained about two hours with her; she seemed tolerably well, and asked to see the child, uttering some joke upon its personal appearance, and altogether led me to believe that all immediate danger was over, and that I might leave her.

I did not learn until I called next day, that about an hour after I had left her she became affected with severe cough, dyspnoea, and profuse hæmoptysis, sat up in bed, and shortly afterwards suddenly expired.

No *post-mortem* examination was permitted in this case; but I think it probable we would have found dilatation of the right ventricle, disease of the mitral valve, engorgement of the lungs and right ventricle, and probably endocardial clot, and effusion of blood into the parenchyma of lungs. The fact of many patients affected with heart diseases recovering from parturition, while others are lost, is perhaps to be referred to the great variety which exists in these affections, and the greater or less progress of the disease. But I think there is another consideration involved, which must modify the result of such cases in an important degree,—I allude to the constitution and temperament of the individual. We know that some females are constituted with such mobility of temperament that syncope may ensue from very slight causes. I attended a patient of this temperament lately in her confinement. This patient usually became very faint when she approached the sea shore. Previous to her accouchement she suffered much from toothache, and I deemed it necessary to extract the tooth. The sight of the scarificator had the effect of throwing her into a succession of fainting fits. On partially recovering her consciousness, I administered chloroform, which had the desired effect, and the tooth was extracted. I can readily understand, that in this patient disease of the heart would be much more likely to give rise to fatal syncope, than in one of more robust habit with the same disease, even in a greater degree. Cases are on record of death from syncope produced by sudden mental emotion, as joy and grief. Dr Alison observes (p. 13, "Pathology and Practice of Medicine"), "intense pain, or the sudden transition from pain to ease, when acting with intensity, in persons in a state of unusual weakness or exhaustion, have occasionally the same fatal effect." The moral and physical changes which occur after labour has terminated, may in this manner sometimes determine the fatal result, and so far account for the fact, that it is seldom during labour, generally immediately after labour has terminated, that death takes place by syncope. In a patient exhausted by suffering and exertion, perhaps originally of delicate constitution and fragile form, we have the sudden transition from the most intense pain to ease, comfort, and the most lively emotions of joy. In the case alluded to, in which the tendency to syncope was so readily manifested, there was no sudden transition of this kind—that her sufferings were over, and the child born, gradually dawned upon her while yet under the influence of the sedative effects of that agent which had rendered her altogether insensible to the birth.

I attended a patient several years ago, in her second and third confinement, of a temperament quite the reverse of the above. She was of robust habit of body, and of a bold masculine disposition. She recovered from both confinements, but died four months after the last. I do not think I have ever seen a case in

which the pains were more violent, yet no symptoms occurred during or imme-
diately after labour, to give rise to the slightest suspicion that she laboured
under an affection of heart, and yet she had that malady in a very serious
form, along with disease of the kidney. Within three weeks after her delivery
she had an attack of hepatic inflammation, followed by ascites, general dropsy,
and painful dyspnœa. On examining the chest, the action of the heart was
regular, accompanied by well-marked harsh sawing murmur ; and if my recol-
lection does not betray me, the symptoms were rather those of an affection of
the aortic valves, with hypertrophy of the left ventricle. In this last case there
seemed to be greater risk of cerebral congestion than of syncope. She com-
plained after her labour that she did not see very well. I found that the right
eye being closed, she could see with the left eye objects only presented towards
the inner angle,—but not when they were removed to the outer angle,—indicat-
ing partial amaurosis, probably from hyperæmia of some portion of the brain or
optic nerve. She was confined in January 1843, and recovered from the drop-
sical affection previous to her next confinement, which took place in March
1844. She was in a most distressing condition during the latter months of her
pregnancy. Dr Simpson, at half-past eight on the evening of the 27th, rup-
tured the membranes. Labour came on the next morning about three o'clock,
and was so alarming in its severity, that while notice was sent to me,
they also sought the nearest medical attendant they could find. She was
delivered with forceps after being about three hours in labour. As regarded
the labour, she recovered well. In August, or between four and five months
after this confinement, she died suddenly. I understood from those present,
that, uttering an exclamation, and raising her hand to her head, she reeled for
a moment, then dropped down unconscious. She died about three hours after-
wards, remaining comatose during the brief period which elapsed from the
occurrence of this apparent attack of apoplexy.

An interesting paper has been recently published by Dr Meigs of Philadel-
phia, giving an account of cases of sudden death after delivery, in which he
attributed the fatal result to the formation of endocardial coagulum, independ-
ent of any disease of the heart. The opinion of Dr Meigs, as to the cause of
death in several of these cases, is so far supported by the post-mortem exami-
nation, but not in all of them. In one case there does not appear to be any
evidence whatever, that the patient died from the cause alleged. In the first
case the patient " lived forty-eight hours after the occurrence of alarming
symptoms, during which time she suffered the most inexpressible respiratory
distress, &c. The auricle, tricuspid, and ventricle were completely " tamported"
with a clot, which was not an ethanasial clot, but consisted apparently of a
firm whitish yellow mass of fibrine, out of which every particle of hæmato-
globulin had been washed away or expressed. In another case, the patient was
well and in a satisfactory condition, twenty-four hours after her confinement,
when she was suddenly seized with a violent, alarming illness. Her pulse was
extremely frequent, feeble, and small ; it continued frequent until the moment
of her death, which took place about the nineteenth day. After her death a
great quantity of water was found in the cavity of the right pleura, while a
firm white coagulum, entirely destitute of corpuscles, was detected in the right
auricle, filling up very much the cone of the tricuspid, while the ventricular
end of it seemed to be torn or thrashed to pieces by the cordæ tendineæ, which,
during so many days, had been vainly occupied in the endeavour to demolish
it."

The cause of death in the second case related by Dr Meigs, is by no means
so well established as in the other cases. He states, that in a case of natural
labour, the medical attendant " while at his breakfast, ' heard' cries from the
stairway, calling upon him for ' God's sake' to hasten to the assistance of the
patient. In a moment he was at her bed-side, when he found her already dead,
having fallen backwards across the bed, with her legs hanging over its side.
He was told that she had said to her nurse, ' I wish to get up.' ' The doctor

says, madam, you must not get up, if you please.' ' But I must get up—I will get up.' She threw her feet out of the bed, and rose up, sitting upon its edge, her head reeled to and fro, and she fell back and expired. No examination was made of the dead body ; but I ask the reader to explain the cause of this sudden death, otherwise than by the rationale that her heart ceased to beat, because it became *instantly* filled with an immoveable clot."

He continues : " Man cannot die save by the cessation of activity in the brain, or in the heart, or in the lungs ; he lives within this triangle, and can only escape at one of its angles. He must die by the brain, or by the heart, or by the lungs. It is to the last degree improbable that this woman perished solely because her brain ceased to evolve ; but if it did not *instantly* cease to evolve, it must have continued to be the cause of motion everywhere."

I think we can by no means concede that death took place in this instance from the cause assigned. The patient does not appear to have been labouring under any embarrassment of the circulation or respiratory organs ; there had been no hemorrhage, to which Dr M. in some measure attributes the formation of false polypi ; and the instantaneous formation of a coagulum, on the patient's suddenly sitting up, is highly problematical. In the other cases adduced by Dr Meigs, the patients survived from two to twenty days the occurrence of alarming symptoms. In the above case death was instantaneous ; and in the absence of further information, more probably arose from the patient's suddenly and rapidly rising from the recumbent posture. The manner in which Dr Meigs arrives at his conclusion, if I rightly comprehend him, is also unsatisfactory. He states : " In regard to the diagnosis of cases in which the endocardial coagulum becomes suddenly constituted, as in the examples of which I have spoken, it appears to me that the medical observer, in order to make it, must resort to a method which is only to be fitly characterised as transcendental diagnosis. It is true that the feeble impulse, and almost complete suspension, of the sounds of the heart, might serve as a quasi-physical diagnosis, of, however, little value. By transcendental diagnosis, I mean one made by a process of the mind, fitter to be called sentiment or conviction, than a regular ratiocinative progress."

With deference to Dr Meigs, sentiments may be instinctively adopted, but I think we can scarcely arrive at conviction, but by careful induction, and the cautious application of the reasoning powers. With respect to the exhibition of chloroform in cases of heart disease, I understand that in ordinary practice it is occasionally used in such cases without any bad result. Are there any circumstances, then, to preclude its use in cases of disease of heart during labour ? There are many circumstances, assuming it to be otherwise safe, which would strongly indicate its application. If it be true that the result of these cases is modified by the greater or less susceptibility to the moral and physical changes in different constitutions, and by the sudden transition which takes place at the termination of labour, the unconsciousness of the patient, while under an anæsthetic agent, by removing her for the time being beyond the reach of these influences, may be the means of saving life, and obviating the tragical result, perhaps the most painful which a medical man can be called upon to witness.

CONSTITUTION OF CODEINE, ETC. BY DR THOMAS ANDERSON.

At the meeting of the Royal Society of Edinburgh, on the 15th April, a paper was read by Dr T. Anderson on " The Constitution of Codeine, and its Products of Decomposition." From the analyses contained in the paper, it appears that codeine in the anhydrous state is represented by the formula $C_{36} H_{21} N O_6$ and that its hydrate is $C_{36} H_{21} N O_6 + 2HO$. This formula was further established by the description and analysis of a number of its salts ; and the remainder of the paper was taken up with the consideration of the substances obtained by the action of different re-agents upon the base. By the action of

nitric acid, a new base, *nitro-codeine*, was obtained, which is precipitable by ammonia, crystallises in yellowish prisms, and has the formula $C_{36} H_{20} (N O_4)$, $N O_6$. With bromine, codeine yields two different products, *bromo-codeine*, with the formula $C_{36} H_{20}^{*} Br N O_6$; and *tribromo-codeine*, $C_{36} H_{18} Br_3$ $N O_6$,—both of which are possessed of basic properties. By the action of chlorine, resinous products only were obtained; but a mixture of hydrochloric acid and chlorate of potass yields *chloro-codeine*, which corresponds to bromo-codeine, and is represented by the formula $C_{36} H_{20} Br N O_6$. With cyanogen, codeine also yields a remarkable compound, *bicyano-codeine*, formed by the direct union of codeine with two equivalents of cyanogen. This substance is also a base, but it is so motable that its salts cannot be obtained in a pure state. Codeine is also decomposed by heating with a mixture of lime and potash, and yields, according to the temperature, the *methylamine* of Wurtz, or a new base called *metacetamine*, which forms the term of the same series corresponding to meta-cetonic acid.

THE LATE THOMAS ANDERSON, ESQ., SURGEON, SELKIRK.

Since the publication of our last Number, we regret to record the decease of the above highly esteemed and well known practitioner. He died on the 7th of April, of a somewhat rare and hitherto undescribed form of *tubercular peritonitis*, which consisted in the presence of numerous tubercles over the whole peritoneal surface, without the smallest trace of disease in any other texture or organ. The affection had been undermining his strength for upwards of six months, but until the last two months did not develop itself so decidedly as to unfit him altogether for professional exertion. It is thought to have had its origin and impulse in several attacks of acute abdominal pain—supposed to be of a gouty character—which he suffered at considerable intervals of time during the last three years; and, doubtless, it must have been urged on by the very arduous nature of his professional labours. We believe that in no district of Scotland could be found an instance of a practitioner undergoing a similar amount of fatigue—and with impunity, for such a length of time; for although Dr Anderson had scarcely attained at death his sixty-fourth year, he had been in active, unceasing practice for a period of forty-six years, having obtained his diploma as surgeon at the early age of eighteen. It is well known over *the south country*, that he frequently rode during many days in succession at a rate of from sixty to seventy miles per day. All who knew him,—and few have been more widely known in their day,—looked upon Dr Anderson as "a tower of strength;" and long will his personal appearance be remembered—his height and breadth—his manly bearing—his ruddy complexion and bushy eyebrow. Were it, however, in respect of physical appearance and capabilities only that Dr Anderson was distinguished "above his fellows," these would not be worth recording in our pages. As a practitioner, the very amount of his labours over a wide district of country, and among all classes, bears witness to his success and popularity; and his professional brethren, not only of Galashiels, Melrose, and neighbourhood, but of more distant towns, such as Peebles, Hawick, Langholm, Jedburgh, and Kelso, know how often they and their patients have benefited in consultation by his practical sagacity and experience, and many of the former, we have reason to believe, now feel as if their right arm was removed. It was chiefly owing to his exertions that, a number of years since, an annual meeting of the border practitioners was arranged, having for its object the interchange of professional experience and good will; and this Society, we know, has been kept up with spirit, and has produced the happiest effects. Considering Dr Anderson's life of toil, and small opportunity for study, to his credit it may be said, that there was no lagging behind the strides of science, no tardiness in adopting real improvements in practice; and although he never aspired to the honour of authorship, he was fond of medical literature and dis-

cussion, and read with avidity and discrimination what was worthy to occupy the spare corners of his time. As a man, he was humane, generous, sociable, and upright; and his memory will long be cherished with admiration and respect. In the mansion of the titled, in the farm house, the shepherd's hut, or the tent of the road-side *tramper*, he was equally kind, attentive, and considerate—sparing no time or exertion when human suffering might be relieved; and even when aware that he could not be well or at all requited, he did not hesitate to rise from bed, though, perhaps, not yet refreshed by sleep after the fatigues of the previous day, and would bravely face the keen wind, the pelting rain, or drifting snow, in his ride to the head of Ettrick, across the Minch Moor, or to some such other distant, wild, and dreary region. Recompence and comfort were never for a moment set up in opposition to the call of duty and humanity. Wherever he went, Dr Anderson was welcomed as a friend— " a kind familiar friend "—as well as an experienced and skilful physician. His knowledge of the world—his business habits—sterling integrity—and disinterestedness—led many to consult him on various matters besides those pertaining to bodily infirmity. Many have had occasion to honour and bless him for the wisdom of his council, and the promptitude of his assistance in arranging a difficulty, mediating in a disagreement, or securing for them a favour or a bounty ; and many now mourn over the loss of their kind and considerate benefactor. While he was the dignified physician and gentleman, Dr Anderson was not less the light-hearted and social companion. His kind words and jocular remarks, were ever as ready and well-timed as his serious advice ; and as he possessed much kindliness and delicacy of feeling, general intelligence, and a thorough knowledge of country life, his society was much sought and valued by the gentry of the surrounding districts. Among his more familiar friends, and his professional brethren, he always constituted the soul of the social board. His presence was ever hailed with a joyful welcome when visiting in such circles; and his own home was distinguished for the hearty hospitality given to all, and the cheerfulness and happiness which he invariably diffused around. But last, and not least, Dr Anderson has left this world bearing the reputation, and holding by the sure hope, of a sincere and humble Christian. The whole tenor of his life attests his amiability, uprightness, and strict morality. He could mix with society without falling into its snares; he could use the good gifts and opportunities of Providence without abusing them ; no one could be more self-denying or guarded; vice or scepticism received no favour from him; principle was his motto, and duty his guide. His religion was quiet and unostentatious, but not the less sincere ; and during his last illness he gave abundant evidence and testimony to the sterling nature and maturity of his convictions, and the strength of his faith. The resignation and calmness which characterised his protracted and painful sufferings, and his firmness on the near and felt approach of death, showed that in him there was realised the scripture mark of " the perfect " and " the upright man,"—" for the end of that man *was* peace."

Viewed in all its aspects, we would hold up the life and character of Dr Anderson as an instance of the status and respect which a provincial practitioner may acquire, and as a model of what he ought to be, professionally, socially, and religiously.

Dr Anderson was the son of an able and good man, who long practised medicine in Selkirk, and who, after establishing his son there, removed to this city, where he soon obtained a large practice. His eldest brother, Dr Alexander Anderson, well known for his worth and piety, accompanied Mungo Park[1] in his last African expedition, and perished likewise in the enterprise ; another brother, John Anderson, was a talented surgeon in the navy ; and a third

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[1] This celebrated traveller served his apprenticeship as a surgeon under Dr Anderson's father in Selkirk, married one of his daughters, and while practising in Peebles, the subject of our notice was apprenticed to him.

brother, still alive, Dr Andrew Anderson, served his country long and well,—first in the Peninsular war, and latterly in the West Indies, as surgeon of the 92d and 61st regiments of foot. Dr Anderson has left three sons in the profession, two of whom are in practice at home, and one abroad.

DEATH OF DR PROUT, F.R.S.

This distinguished physician and chemist died at his house in Sackville Street, London, on the 9th April. We need hardly inform our readers, that his original researches in the field of physiological chemistry had earned for him a high reputation, and are probably destined to exercise an important influence on medical practice for many years to come. His most important contributions to science were his work on " Calculi and Urine," London, 1820 ; his " Bridgewater Treatise, on Chemistry, Meteorology, and the Function of Digestion, considered with reference to Natural Theology," 1834 ; and his " Treatise on the Nature and Treatment of Stomach and Urinary Diseases," published in 1840, and still the standard authority on the subjects of which it treats. Dr Prout was a graduate of the University of Edinburgh, a fellow of the Royal College of Physicians of London, and a fellow of the Royal Society. At the time of his death he was in the sixty-fourth year of his age.

VARIETIES.

NAVAL ASSISTANT-SURGEONS.—By a vote of the House of Commons, the false position of the assistant-surgeons of the navy has been at last acknowledged, and the responsibility of carrying the wishes of the house into effect now rests with the Admiralty. The unanimity with which every section of the medical profession has petitioned the legislature upon this subject, has at last prevailed against the official deafness which caused their petitions to be so long disregarded ; and although the first Lord of the Admiralty still considers it *impracticable* to carry out the proposed reform, means will, we hope, suggest themselves ere long. The thanks of the profession are due to Captain Boldero, who introduced and carried this important motion, and to the forty-seven gentlemen who voted along with him.

MEDICINE IN SPAIN.—It seems that of late the youth of Spain have manifested so marked a preference for the medical and legal *professions*, and so decided a repugnance at the very name of a *trade*, that the minister of the interior has thought it expedient to circulate the following notice very extensively :—" In a social point of view," says the minister, " the country loses, in each of its members thus disgraced, a useful individual ; in an economic point of view, society is thus deprived of capital which becomes unfruitful. Meanwhile," adds he, " our sea-ports want pilots, our manufactories want dyers, designers, weavers ; we have a lack of men skilled in engineering, in mechanics, &c. ; in a word, every branch of industry languishes for want of qualified artizans."—*Union Médicale.*

[Perhaps, if the minister were to create in Spain a class of general practitioners, " the amphibious link between a profession and a trade," to borrow the words of Mr Skey, this awkwardness might be arranged. The higher classes would not stoop to a trade, and the lower would not aspire to a profession avoided by the aristocracy. Medicine would thus cease to be overstocked with professors.]

LOGICAL ACUMEN OF THE INSANE.—A Jesuit, Sguambari by name, believed himself to be a cardinal, and insisted that he should be addressed by the title of " Eminence." His physician endeavoured to reason him out of his false idea,

upon which the madman spoke as follows :—" You either believe me rational, or take me to be insane. In supposing the first, your remonstrances are an insult to me ; and in admitting the second, I cannot tell which of us is the more insane of the two—myself or you—who pretend to cure a madman by such a show of 'logic.' "—*Journal of Psychological Medicine*, April 1850.

[We presume that this anecdote has been placed on record to show the apparent sense but real absurdity of the argument.]

QUACKS AND QUACKERY.—In the case of Ozanne *v.* de Lille, recently tried in Guernsey, it was decided, that although we may legally say that homœopathy is quackery, it is illegal to call a homœopathist a quack. Thus a man that practises quackery of the grossest description, is not a quack *in law*, which is another proof that *de jure* and *de facto* are altogether different. We advise our readers, therefore, in future, never to say that a man is a quack, but to say he practises quackery, which is legal, and among people of common sense, equally significative.

EXTRACTION OF FOREIGN BODIES FROM THE NOSE.—An American practitioner recommends, that the nostril which is free should be closed, and that the physician should blow forcibly *with his own mouth* into the mouth of his patient. The result is stated to be the discharge of the foreign body, if it be of such a shape as completely to obstruct the nostril. If, however, it only partially fills the cavity, the air may pass alongside without removing it. [A more filthy proposal we have seldom met with.]

VACCINATION.—It was stated in the Cork Grand Jury Room, at the Assizes, that vaccination cost L.400 in the Kentish Union.—*Med. Times.*

MINUTE ANATOMICAL INJECTIONS.—Dr Goddard, an American physician, gives the following *recipe*, which, he says, is uniformly productive of exquisitely beautiful results. Vermilion very finely ground in oil is agitated in a stoppered bottle, with twenty or thirty times its bulk of sulphuric ether. This injection, when cautiously thrown into an artery, returns, after a few moments, *clear*, by the veins. The preparation must then be steeped in water at 120°, in order to drive off the ether, and may finally be sliced, dried, or put up in any of the ordinary preservative fluids.—*Philadelphia Med. Examiner*, December 1849.

BOOKS RECEIVED.

On the Use and Abuse of Alcoholic Liquors—Prize Essay. By William B. Carpenter, M.D. London : 1850.

Journal of the Statistical Society of London. Vol. XIII. Part I. March, 1850.

The Treatment of Secondary, Confirmed, and Constitutional Syphilis. By Langston Parker, Surgeon to the Queen's Hospital, and Professor of Anatomy and Physiology in Queen's College, Birmingham. London: 1850.

Statistics of Cholera. By Assistant-Surgeon Edward Balfour, of the Madras Army. Madras: 1849. (From the India House.)

On Anormal Nutrition in the Articular Cartilages. By P. Redfern, M.D. Edinburgh: 1850.

The London Medical Examiner. Nos. I. and II.

Eighth Report of the Birmingham and Midland Counties Pathological Society. Birmingham: 1850.

Microscopic Examination of the Water Supplied to the Inhabitants of London, and the Suburban Districts. By Arthur Hill Hassall, M.B., &c. London: 1850.

Wochenscrifft für die gesammte Heilkunde. Herausgegeben von Dr Casper. Berlin: 1850. (First 12 Nos. received.)

On Diseases of Menstruation and Ovarian Inflammation. By Edward John Tilt, M.D. London : 1850.

The Chrono-Thermalist. No. II. London : 1850.

Pathological Researches on Death from Suffocation and from Syncope ; and on Vital and Post-mortem Burning. By Samuel Wright, M.D., &c. 4to. London: 1850.

NOTICES TO CORRESPONDENTS.

Communications have been received from Dr BEGBIE, Edinburgh; from Dr WALKER, Inverness ; from Dr KILGOUR, and from Dr GEORGE J. NICOLL, Aberdeen.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Remarks on Erythema Nodosum, and its Connection with the Rheumatic Diathesis.* By JAMES BEGBIE, M.D., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh.

(*Read to the Medico-Chirurgical Society of Edinburgh, 3d April* 1850.)

IT is wisely remarked by Dr Gooch, in his admirable essay "On some symptoms in children erroneously attributed to congestion of the Brain," that "in observing disease, two sets of symptoms may be noticed, which are mixed together in the case, but which require to be discriminated to form a correct opinion of it. The one consists of the striking symptoms which form what may be called the physiognomy of the disease; the other consists of those symptoms which indicate the morbid state of organisation on which the disease depends. The former only are noticed by the common observer, but the latter are the most important, and the skilful physician takes them for his guides in the treatment." "He notices not only where the hour hand of nature's clock points, but also the run of its minute and second hands." [1]

These judicious reflections apply with marked propriety to many diseases of the skin, and perhaps to none more, than to that singular affection, a short notice of which I now offer to the Society.

The variety of *erythema*, to which the term *nodosum* has been applied by systematic writers, is characterised by red elevated patches, of an oval form, varying in size from an inch to an inch and a-half in length, by half an inch or more in breadth, their long diameter being uniformly parallel to the axis of the limb on which the eruption appears; and this part is generally the anterior of the legs, or shin as it is called, over which, I have observed, that the patches are distributed with symmetrical regularity ; occasionally, also, but more rarely, they appear on the forearms. I have never seen them on any other part of the body. The affection occurs most commonly in young women ; but it is not limited to them, as some authors sup-

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[1] Gooch's Account of some of the most Important Diseases of Females. 2d Edit. P. 344.

pose, but is observed in young men, and in children of both sexes. The eruption is preceded and accompanied by more or less febrile disturbance, by moist furred tongue, deranged bowels, and scanty high-coloured urine; often by pains in the joints and muscles, and always, when severe, by feelings of depression and great disorder. The patches continue for some days to rise above the level of the surrounding skin, becoming more elevated towards the centre, and forming painful bumps or protuberances, which appear, when pressed on by the finger, to offer a fluctuation, and promise a suppuration, which never, however, takes place. With the resolution, the red colour fades, and is succeeded by a bluish or dusky hue, resembling somewhat the appearance of a bruise; the tumefactions soften and disappear, the general indisposition subsides, and the case usually runs its course in ten or fifteen days. In some instances, however, the protuberances have continued hard and painful for a longer time; and the blue discolorations have lasted several weeks. The disease is apt to recur, and its premature retrocession, or natural decline, have been noticed as the period of the invasion of serious internal disease.

Such is a general description (as given by authors, and verified by observation) of a malady, which by many is considered more curious and rare than interesting and instructive; to whose history little or no importance has been attached by most of the recognised authorities on cutaneous diseases; whose associations with marked disordered function and morbid action have been nearly overlooked, and a knowledge of whose real character is only beginning to be developed, by the steady advance of an enlightened humoral pathology.

In illustration of the form in which the disease occurs in practice, I offer a passing notice of two cases, the last which have come under my observation. One of these was a boy, aged 13, said to belong to a healthy family, and to be free from any predisposition to disease, who had been living hitherto in the country, and had only lately come to town, to pursue his education at the New Academy. He was tall and strong for his age; but his friends had remarked that, for some time past, his countenance was pallid, and his appearance cachectic, and that he had evinced much disinclination for mental or bodily exertion. I saw him on the second or third day of a febrile attack, and in the early stage of the eruption of the nodose erythema; the patches were large and numerous, tender, painful, and hot, distributed over the fore part of the legs, and also over the forearms, with symmetrical regularity, accompanied by headach, languor, and lassitude, and by deep-seated pains in the joints and muscles of the extremities. The pulse was frequent, full, and compressible; the tongue loaded with a creamy fur; the skin hot, soft, and moist; the bowels inactive, and the dejections dark and offensive; the urine scanty and high coloured, and gradually depositing more and more of the lateritious sediment. The disease pursued its course, appar-

ently unmoved by antiphlogistic treatment; the tongue continued foul, the bowels disordered, and the urine defective and deranged; the febrile state had somewhat subsided, and the bright red discoloration had faded into a bluish or livid tint, when, about the seventh day of the eruption, the sulphate of quina, as recommended by Dr Watson, was prescribed, and its exhibition appeared to produce a marked impression on the features and progress of the case. The tongue, which had yielded nothing to calomel and jalap, now rapidly divested itself of its thick coating; the bowels assumed a more healthy action, and the evacuations a more natural appearance; the urine became copious and clear; the protuberances of the eruption softened and disappeared, the bruised marks vanished, and after a week of convalescence, the patient returned to his books and his play.

We have in this case a well-marked instance of the erythema nodosum in a boy of 13, previously healthy, but manifesting before its occurrence the characteristic signs of a peculiar diathesis, as exhibited in the pallid and cachectic look, the defective excretions, and the deep-seated pains in the limbs and joints. We remark also, the beneficial effects of quina in the treatment, as corresponding with the experience of Dr Watson in this disease.

The other case, to which I shall at present allude, occurred in the person of a domestic servant, a young woman of 20 years of age, of pallid complexion and delicate appearance, and subject to irregular and defective menstruation. When seized with an attack of a febrile character, followed by copious patches of the nodose erythema, distributed over the fore part of the legs, and accompanied by the usual tenderness, heat, and pain of the eruption, she had requested the attendance of a respectable practitioner in the neighbourhood of her master's residence, who had prescribed rest, diaphoretics, and laxatives, under which the disease appeared to yield. On the eighth or tenth day of her illness, however, I was requested to see her, in consequence of an attack of acute pain in the lower part of the left side, with impeded breathing, rapid pulse, and increase of fever. The bright blush of erythema had at this time sunk into the dusky blue; the protuberances had softened and declined; but the general derangement of health, manifested by the pale sickly look, the loaded tongue, and disordered excretions, had not given way; and to these were now added the symptoms of thoracic inflammation,—the general and physical signs of acute pleurisy. By means of moderate bleeding, the employment of calomel and opium, and counter-irritation, these latter were overcome, and after a short attendance the patient was dismissed, with instructions to persevere in rules of diet and regimen, and in means calculated to improve digestion and nutrition, and to regulate the menstrual discharge.

We remark, in this case, the occurrence of the erythema nodosum in conjunction with amenorrhœa and other signs of cachexia, and the supervention of acute pleurisy. In connection with this, we may note a case, related by Mr Wilson, of a young woman, aged 22,

who enjoyed good health until nine months before, when she obtained service in London as housemaid. From that period she suffered constant illness; sometimes her bowels were constipated, sometimes she had nausea, at other times cough; menstruation was disturbed, becoming scanty and light coloured; she had leucorrhœa, and copious deposits in her urine, with difficulty in passing it. Associated with these symptoms, she had a constant feeling of languor, loss of appetite, and indisposition to make any exertion. While in this state, she was seized with a dry hard cough, accompanied with headach, and the usual train of febrile symptoms, and a copious eruption of erythema tuberosum[1] made its appearance on the forearms, knees, and legs. The majority of the spots were of the size of a shilling piece, they were distributed irregularly over the skin, and were very tender to the touch. On their first appearance they were vividly red, but soon became purplish and yellowish, and by the third or fourth day were on the decline. This patient recovered at the end of three weeks.[2]

In this case we remark also the evidences of a cachectic state of constitution, accompanied by defective menstruation, and other symptoms, such as are frequently observed in females resorting to large towns, and indulging in modes of living contrary to their previous habits in the country.

Keeping in mind the leading features of these cases, let us turn to the writings of some recent authors, with the view of discovering whether any uniformity of observation, or correspondence in views, in regard to the nature of this affection, are found to prevail.

Mr Plumbe informs us that a high degree of derangement of the secretions, and disordered state of those organs in which the process of chylification is carried on, has been noticed constantly when the disease has come under his observation.[3]

Dr Joy says he has known it return frequently in the same individual, attended with considerable œdema, and often terminating in desquamation, succeeded by severe pains in the limbs, which demanded the employment of pediluvia, bandages, &c.[4]

Dr Todd says, " I am not aware that any cutaneous disease occurs in connection with this (rheumatic) diathesis ;" but subsequently he notices that an eruption, resembling erythema nodosum, and occurring chiefly or exclusively on the lower limbs, is occasionally witnessed in rheumatic fever.[5]

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[1] " I consider erythema papulatum, tuberosum, and nodosum (says Mr Wilson) so closely allied to each other, that were it not for the fear of creating confusion, I should include them under the same name. The two former are commonly associated in the same patient, and I have more than once seen erythema papulatum on the face and hands, while erythema nodosum existed on the legs."—Wilson on Diseases of the Skin, p. 144.

[2] Wilson on Diseases of the Skin. 2d Edit., p. 169.

[3] Plumbe on Diseases of the Skin. 4th Edit., p. 503.

[4] Cyclopædia of Practical Medicine, Art. Erythema. Vol. ii., p. 120.

[5] Todd on Gout and Rheumatic Fever, pp. 110 and 123.

Rayer has seen the skin affection in connection with acute rheumatism.[1]

Dr Watson connects it with disturbance of the menstrual functions, and has seen it occur in connection with acute rheumatism; and mentions, that a patient of his in the hospital was attacked with the affection of the joints immediately on the cessation of the erythema nodosum; and that in another this order was reversed.[2]

Dr Copland notices that it is sometimes connected with the approach of the catamenia; and that its premature disappearance is sometimes followed by dangerous internal disease. Mr Dendy saw pneumonia suddenly supervene on its retrocession.[3]

Mr Wilson mentions that the erythema papulatum is usually associated with irritation of the gastro-pulmonary mucous membrane, and sometimes with rheumatism; the erythema tuberosum with disordered menstrual function; and that the erythema nodosum (all nearly allied) is observed also in connection with rheumatism.[4]

Willan, Bateman, Thomson, and Biett are nearly silent on the subject of the complications of erythema nodosum, and little can be gathered from writers of an earlier date,[5] but enough has been culled of available materials, to demonstrate the connection of this form of erythema with a marked diathesis; and opportunity sufficient is afforded for a reasonable conjecture, that this is the rheumatic constitution, and that the skin affection is symptomatic of the blood disease. These conclusions may fairly be arrived at, for the following reasons :—

1st. The skin affection is most prevalent in, if not confined to, the young, and those under thirty—the chief subjects of the rheumatic diathesis and rheumatic fever.

2dly. It occurs very frequently in females suffering from menstrual derangement, confirming the views of Drs Todd, Rigby, and Locock, as to the intimate connection of disorder of the uterus with rheumatic affections.

3dly. It occurs in connection with disorder of the general health, characterised by pallor, cachexia, and defective excretion; and subsequently developed in febrile excitement, pains in the joints and muscles, and the copious deposition of lithates in the urine—a state of matters analogous to what takes place in rheumatism.

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[1] Rayer, Traité des Malad. de la Peau.   Tom. i., p. 123.
[2] Lectures on the Practice of Physic.   Vol. ii., p. 836.
[3] Dictionary of Practical Medicine.   Art. Erythema.
[4] Wilson on Diseases of the Skin, p. 162–4.
[5] In that curious store-house of medical facts, furnished by Dr Parry, under the head of " Relation of Diseases by Conversion," it is recorded that rheumatism often alternates with cutaneous eruptions; and in speaking of this relation, after giving many examples of a similar kind, he says, " In all these instances, which have been derived solely from my own observation, and to which many others might be added from medical writings, the several forms of disorder appear to be vicarious affections, consisting of different modifications of one common action, directed from unknown and spontaneous causes to different parts."—Elements of Pathology, p. 392.

4thly. It is associated frequently with rheumatic fever,—co-exist-ing or alternating with it.

5thly. It is often complicated with those internal disorders with which rheumatism is allied, particularly with pleurisy and pneumonia. I have not hitherto noticed it in connection with cardiac disease.

Lastly. Erythema nodosum yields to a plan of treatment (I mean the use of bark[1]) which was long extensively and successfully employed in the treatment of rheumatism, and still has its advocates among the best informed physicians of the day.[2]

But the question will, no doubt, occur,—Of what value is the knowledge of this relation existing between the affection of the skin and the rheumatic diathesis, admitting that the connection were satisfactorily established ? I answer,—Of great practical value. Let it be understood that the cutaneous disease is generally found associated with evidences of defective assimilation and cachectic condition of the system, such as precede or accompany an attack of rheumatism; that it not unfrequently co-exists or alternates with a paroxysm of that disease; and that, during the course of the erythematous eruption, or on its decline, or by its sudden retrocession, some of those acute affections with which rheumatism is allied—such as pneumonia and pleurisy—are apt to supervene; and where is the practitioner who will not watch with jealous eye the origin and progress and termination of every such case? while, at the same time, from possessing correct views of the pathology of the disease, he will be in a position to treat, not those symptoms which constitute the physiognomy of the case, but that morbid action which is its essence, which is so productive of extensive mischief, and so often followed by disastrous consequences. He will look upon the skin affection as a symptom only of a great constitutional disorder in which many vital organs are apt to suffer, remembering that the disturbance consequent on their serious lesion is often the first circumstance which arrests the attention of the patient or his friends, and will be ready to avail himself of every appliance for the discovery of obscure or insidious disease, and of every means of treatment by which

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[1] " I once had a housemaid (says Dr Watson) in whom the disorder (erythema nodosum) appeared, and was attended with unusually high fever and much indisposition. I treated her, therefore, antiphlogistically; i. e., I kept her on low diet and gave purgatives ; but the disease went on. Fresh knots came out as the old ones faded. At length, I do not remember why, I prescribed some quina for her, and the improvement was immediate and very striking. She relapsed, however, once or twice, upon leaving off the bark, but by persisting subsequently in its use for some days after she appeared to be well, a permanent cure was effected. Since that time—now twelve or fourteen years ago—I have seen a good many examples of erythema nodosum, and I have treated them all alike,—viz. first with an aperient and then with the sulphate of quina, and they have all rapidly got well."—Lectures on the Practice of Physic. Vol. ii., p. 836.

[2] Copland's Dictionary of Practical Medicine. Vol. iii., p. 630.

the morbid element may be eliminated from the blood, and the peculiar diathesis to which it has given rise entirely overcome.

It is an important fact, which cannot be too much kept in mind, that all the phenomena which constitute the characteristics of rheumatism may be present in a case, with the exception, at one time, of fever, and, at another, of the affection of the joints, or of both these together; and that all the danger, and all the damage, which a paroxysm of rheumatic fever is capable of producing, may be equally, though much more silently and stealthily, brought about, when the *materies morbi* circulating through the blood has as yet, from unknown causes, failed to induce the febrile action; or, in raising it, to superadd the affection of the joints. It is in this way that we can account for the occurrence (in those of the rheumatic diathesis) of chorea and diseased heart, conjointly or separately, so often met with in young people;[1] and, again, of copious effusion into the sac of the pleura in others, of which I have seen many instances, particularly in boys, who, though somewhat ailing, have been able to continue their attendance at school, and engage in play, till some symptoms of impeded breathing have arrested the attention of friends, when exploration has discovered the lower half of one side of the chest dull, on percussion sound, and exhibiting the other signs of pleuritic effusion ;—an effusion which appears to have taken place in a manner somewhat analogous to, or identical with that, which often, in the same character of constitution, rapidly and unexpectedly fills and distends the synovial capsule of the knee-joint.

In all the boys alluded to, the evidences of a cachectic state had been previously noticed, and I believe the same condition is observable in those affected with effusion into the joints. For instance, some days ago, after prescribing for a lady in town, my attention was called to a domestic in the family, who had been complaining for several weeks. She was pallid and sickly; suffered from dyspeptic symptoms, from obstinacy of bowels at one time, and, at another, from relaxation; was feeble, and readily fatigued; and felt unable to continue her duties. On examining her urine, it was highly acid, and loaded with urate of ammonia. She had formerly had rheumatic pains. I ventured to predict an attack of this cha-

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[1] On the subject of the connection of rheumatism and chorea, I am happy to acknowledge that, in the views I entertain, and which I laid before the Society ("Monthly Journal" for April 1847), I have been in some measure anticipated by Dr Todd, of London,[1] whose notice of the relation I had not seen when that communication was read, and subsequently published. It is gratifying to me to find that I have independently arrived at the same opinions as those held by that able physician, from whose writings I have derived much valuable information, and in whose views of the nature of rheumatism I entirely concur.

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[1] On Gout and Rheumatic Fever, p. 115.

racter, and, to ward it off, prescribed a simple and limited, but nutritious, diet, with alterative medicine, and full doses of the nitrate and carbonate of potash. I was requested to visit her this evening (April 2, 1850), when I found the synovial capsule of the left knee distended with fluid, and the joint affected with pain and stiffness,--symptoms which had all come on in the course of twenty-four hours.

In regard to rheumatic fever existing without any articular affection,[1] a case is passing under my observation while I now write, which powerfully illustrates the fact, and a short notice of which may not be uninteresting to the Society.

On the 16th of January last, during the prevalence of keen frosty weather, which called many of the admirers of the art of skating and curling to the pond, a gentleman of the legal profession, approaching the age of thirty-five, of stout make, and full habit of body, and, by hereditary right, strongly disposed to rheumatism,[2] repaired to Duddingstone, to enjoy his favourite amusement. He spent the early part of the day in keenly contested games of curling, in which he was alternately chilled and heated; and left the ice, complaining of an aching pain in his right side, which he at once attributed to the free and unwonted use of his arm, in pursuing his athletic exercise. Before he reached home, however, the pain amounted to a severe stitch, and towards the hour of dinner, he waited on me for advice. On examination, I considered him labouring under pleurodynia, and dismissed him with instructions to retire early to bed, to apply a large sinapism, and take a full dose of

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[1] Dr Graves (see Clinical Lectures, vol. ii., p. 159) was the first, I believe, to direct the attention of the profession to this interesting point, and, though the correctness of his views has been doubted, and men of large experience have not observed such cases, I am confident that they are by no means uncommon, and that the following extract from the work of the eminent physician referred to, contains truths of great practical value :—" In truth," says he, " in rheumatic fever, the quickness of the pulse, heat of the skin, tendency to profuse sweating, debility, restlessness, and thirst, may all exist without any inflammation of the joints, and may be resolved without such inflammation ever occurring, as I have witnessed in several well-marked cases of individuals liable to rheumatic fever, and who had previously suffered from attacks of fever with arthritis in the usual form, and subsequently, on exposure to cold, were seized with symptoms of pyrexia, which, in intensity, duration, and every other particular, were identical with their former fevers, save and except that, from beginning to end, not a single joint was inflamed."

[2] His family experience had been signally painful and disastrous. He had lost his mother in consequence of inflammation attacking the heart, previously damaged by rheumatic carditis ; he had also lost a brother and sister, in early life, by carditis accompanying rheumatic fever ; a paternal uncle, by diseased heart ; and a cousin (a daughter of this last), by acute pericarditis, unconnected with articular affection, but with all the other evidences of rheumatic fever ; and lastly, he had seen his only remaining brother, from time to time, afflicted with the malady which had been permitted to prove so great a scourge to his family.

Dover's powder. His pulse at this time was 72, full and soft; his skin was cool and moist; and his tongue somewhat loaded. An aperient draught was also prescribed for the morning. Late in the evening of the same day, however, I was summoned to his bedside, and found him much indisposed; his pulse had risen to 96, it was still full and compressible; his skin was hot and moist; the pain, which was seated in the lower part of the side, and inclining towards the back, was severe, and greatly increased by motion, by full inspiration, or the effort of coughing. The physical signs at this time gave no clear indication of pleurisy; but judging, from general symptoms, that the costal pleura, at least, was affected, I ordered him to be cupped, and added to the Dover's powder five grains of calomel, with instructions to repeat the dose early in the morning, before taking the aperient. On the 17th he was not relieved, the pain was unsubdued, and more extended towards the base of the scapula; the friction sound was audible over a limited space; the pulse was 100, full and soft; the tongue moist, and loaded; the skin bedewed with sour-smelling perspiration; and the urine, small in quantity, depositing a brick-dust sediment. The bowels had been freely moved; the evacuations were dark, and highly offensive. A second abstraction of blood by cupping was prescribed, to be followed by calomel and opium in the usual form, and the free use of nitre in solution, as a drink. On the 18th there was dulness on percussion over the inferior and lateral portion of the chest, with distant respiratory murmur, and imperfect ægophony; the general symptoms of rheumatic fever continued; but no joint was affected. During the three following days, there was little change in the symptoms; the pain had in a great measure subsided, and the signs of effusion were quite distinct,—limited, however, to the lower half of the right side of the chest; the pulse continued to range from 100 to 108; the urine and perspiration, the tongue and bowels, still manifesting the same high degree of rheumatic character. The calomel and opium were continued till slight ptyalism was induced; and large and increasing doses of the carbonate and nitrate of potass, together with colchicum, were prescribed, in order to favour elimination by the kidney. Towards the 25th, ten days from the date of seizure, considerable absorption of the effused fluid had taken place, the kidneys acting vigorously, and the excretion depositing, day after day, large and increasing quantities of the lithate of ammonia. Convalescence advanced, and for some days before the 31st he was able to leave his bed, and spend some hours on the sofa. On that day, however, by imprudent exposure near an ill-fitted window, he sustained a chill, and all his symptoms quickly revived. The disease now lighted on the opposite side of the chest, and pursued there a course corresponding with that followed on the right. It was rheumatic fever, with inflammation of, and effusion into, the left sac of the pleura. The same practice was

renewed; the same results followed; and on the 14th of February, a fortnight from the relapse, and one month from the original seizure, he was again convalescent. On the 18th, while still confined to bed, and exercising the most exemplary care and caution, as regarded the *juvantia et lædentia,* he was seized with acute pain in the præcordial region, followed by anxious hurried breathing, rapid, feeble, and irregular pulse, cold, clammy perspiration, and inability to maintain the recumbent posture. His expression of countenance was singularly distressing, and he indicated by his looks, more than by words, that this second relapse could not fail of a fatal result. I feared the worst in a constitution so strongly rheumatic, and with the morbid element now fixed on the pericardium. The to and fro sound was audible over the præcordial region, and the impulse there was unnatural and extended. Blood was immediately taken from the region of the heart, and calomel and opium given every alternate hour, till salivation should take effect. A second abstraction of blood followed, after six or seven hours : the pulse improved in strength ; the pale, anxious, distressed countenance revived ; the præcordial pain, and catch in the breathing, subsided ; the physical signs gave way, and disappeared ; and in three days the patient seemed rescued from his impending doom. It was only, however, to be subjected to another, but a less severe and threatening trial. On that day, there occurred renewed pain, of a deep-seated kind, in the region of the first pleuritic effusion, which had remained dull on percussion, and free from respiratory murmur, up to this period. To the pain, now succeeded cough, for the first time, followed by bloody expectoration, and some hurry in breathing; but exploration discovered no abnormal signs beyond the limits of the original pleuritic effusion ; and, the symptoms not becoming aggravated, the hope was entertained that only a small portion of the lung was implicated in this pneumonic attack. Those hopes have been realised. The pulmonary symptoms have gradually disappeared ; and now, at the close of ten weeks from the date of the original attack, the patient is again—and more than ever—a promising convalescent. He carries about with him, no doubt, a partially adherent pericardium, and a doubly adhering pleura, as well as a partially condensed lung ; but his life has been spared ; his infirmities, we know, are compatible with existence—even long extended ; and his age will, ere long, grant him immunity from future attacks of the malady which has proved so disastrous to his family.

It is worthy of remark, that, during this long illness, the manifestations of the rheumatic habit never entirely left the system, nor appeared to yield to treatment, until the close of the tenth week, when they may be said to have declined, and disappeared. The tongue continued thus long foul, the bowels disordered, and the quantity of the lithates and purpurates in the urine was greatly beyond what I ever witnessed in any case of rheumatic fever, however lengthened in duration or severe in character ; while the acid

sweats annoyed, not only the patient himself, but even the by-
standers, by their constancy and the pungency of their odour.

It also deserves notice, that this gentleman, who had hitherto
enjoyed uninterrupted health, and suffered no obstruction in the
discharge of professional duty, or in the practice of daily exercise,
for a long series of years, had been observed, for some weeks before
the seizure just described, as pallid in looks, and somewhat languid
in spirit, and indisposed for mental or bodily exertion; and I have
ascertained that, during this time, his digestion was imperfect, and
his urine constantly loaded with the lateritious deposit—an assem-
blage of symptoms which is too much overlooked in cases of this
class, and which I refer to the more, that it has been attempted to
establish a diagnosis between rheumatism and gout, on the ground
that the latter frequently presents premonitory symptoms affecting
the digestive organs, which is not the case in the former;—a state-
ment which I believe to be contrary to fact, and involving the risk
of serious evil. The premonitory symptoms of rheumatism may pos-
sibly be slight—so slight as to fail in attracting the notice of the
ordinary observer; but I apprehend that they will always be dis-
covered, if sought after; for no attack of rheumatism can take place
without evidences of previous imperfect digestion and defective assi-
milation.

This disorder of the digestive and assimilating functions is often,
indeed, the only departure from health which the physician is called
upon to treat for days—it may be for weeks—before a paroxysm of
rheumatic fever occurs. I cannot forget my own want of due atten-
tion to this class of symptoms in a case which, not many years ago,
proved fatal under my care. The subject of it was a young lady, of
twenty-one, who had been ailing for some time before I was called
to see her. She was then pallid in countenance, and depressed in
spirits. She owned no illness beyond a feeling of loss of strength,
an occasional aching head, a want of appetite, and unrefreshing
sleep. Her tongue was foul, her bowels disordered, and her urine
scanty, and greatly loaded. The catamenia were suppressed. These
symptoms went on from day to day; no local pain, no febrile move-
ment, threw light upon their real nature, and no family predisposi-
tion pointed to their true character. By and by, a degree of fever was
lighted up; and then a degree—a slight degree—of redness, pain, and
swelling of the right ankle-joint, proclaimed itself, and revealed the
latent disorder which lurked within, and which was now developed in
great intensity. The fever, however, exceeded far the amount of arti-
cular complication; the endocardium by and by declared its partici-
pation in the general derangement by the distinctive *murmur;* and
ere long the pericardium also, through the *to and fro* sound. No
remedy availed to save life, though suffering was protracted—pain-
fully protracted—for many weeks; when tumultuous palpitation
and laborious breathing, and dropsical swelling, closed the scene.
No examination of the body was permitted, but the records of many

such cases can declare the havoc that was wrought. The retrospect has often filled me with unavailing regret, that I had not sooner attended to premonitory signs.

But it is not my purpose to enlarge on the importance, the extent, or the dangers of the consequences which flow from the rheumatic diathesis. The subject is becoming every day more appreciated, and so, in proportion, is human suffering diminished, and the boundaries of science advanced. But much remains to be discovered; and it is well to accumulate facts, however trivial in appearance, which go to improve our knowledge of the subject.

The hurried and imperfect remarks which have now been made, may, perhaps, add a connecting link to our lengthening chain of knowledge : at all events, they will have served their purpose, if they lead any to " notice, not only where the hour-hand of nature's clock points, but also the run of its minute and second hands."

ARTICLE II.—*Cases of Cancer in the Thorax.* By ALEXANDER KILGOUR, M.D., one of the Physicians of the Aberdeen Infirmary.

IN the forty-sixth number of the " Edinburgh and London Medical and Surgical Journal," or that for the month of October 1844, I published some cases of " Cancer of the Thorax," principally with a view to assisting in the diagnosis of that disease,—a disease which, I am satisfied, is more common than it is supposed to be by the profession, and which, unless a careful examination be made, both of the history of the case, and of the physical signs attending it, is very apt to be mistaken for some other complaint.

One of the patients (Simpson) was still alive when that paper was written ; but I gave it as my opinion, that the case, though attended with some signs indicative of aneurism, was nevertheless one of osteosarcoma or cancer. And both the external marks developed in its progress and the *post-mortem* examination confirmed this view. He was under my observation either in the hospital or at his own house for a period of twelve months. His last appearance at the hospital was on the 24th of September, when we have this report.

The swelling is still increasing in every direction, and is beginning to press into the neck, upon the trachea and œsophagus, causing more or less difficulty of breathing and swallowing. It is not ulcerated in any part, but in some spots the integuments are acquiring a deep red colour. There is not so marked pulsation in it, nor so distinct bellows sound as formerly. The swelling is attended at times with severe pain. After leaving the hospital nothing additional was remarked, but that his breathing became gradually worse, and the difficulty in swallowing increased so much, that the only nourishment he could take was fluid, and that was principally wine and water. He died in the month of April of the following year.

Sectio-Cadaveris thirty-six hours after death.—The skin of the body of a pale yellow colour; the tumour in the neck not sensibly increased since last

measurement, nor any broken skin, but one or two livid patches in the centre; several purplish coloured veins are seen extending to these patches. On opening the chest about a pint and a-half of bloody serum was found in the right pleura, and in the left pleura pretty strong adhesions. The skin was firmly adherent to the tumour. When cut into, it presented a very firm cartilaginous aspect, but near the centre, where there was a yellowish jelly-like substance. The clavicle was partially gone, and the first rib softened, cutting like cartilage. Heart flabby ; aortic valve cartilaginous ; all the vessels, but especially the aorta, enlarged, and a mass of glands, very much enlarged, was pressing on it just where it arises from the heart. In the lungs, and more observable on their surface, there were small bodies of the same character as the large tumour, some of them containing a granular-like jelly, which exuded when cut into. When examined with the microscope, the tumour, the glands round the aorta, and the granular bodies in the lungs, presented all the same appearance,—viz., very small irregularly-shaped, but for the most part, triangular, cells.

Some years ago his niece had part of her superior maxillary bone cut out in this hospital for a tumour in the antrum, but died shortly after of fungus hæmatodes in her neck and chest.

A case, in several respects similar to the above, is the following. I regret much that I did not here obtain a *post-mortem* examination, but there can be little doubt, from the external characters of the tumour, that it was the same as that in Simpson's case.

CASE VI.—*Dyspnœa—Bronchitis—Cancerous Tumour making its way outwards from the Chest, and probably originating in the Ribs.*

Alexander Moir, æt. 22, labourer, of somewhat cachectic appearance, was admitted into St Luke's Ward on the 7th November 1848, complaining of pain in the right side of the chest, and difficulty of breathing.

Physical Signs.—Chest narrow, little motion of the ribs during respiration, but more on the left than on the right side, which is flattened at the upper part. Percussion elicits a clear sound on both sides of the chest. The respiratory murmur is much weaker in the infra-clavicular region in the right than in the same part of the left side. At the lower parts of the chest, on both sides, the respiration is feebly heard ; but at the posterior part of the chest, below the angle of the scapula, the vesicular murmur is much more audible and stronger on the left than on the right side. Over all the chest some mucous râle is heard. The expectoration is brought up with little difficulty, and is pretty copious, and of a thick, muco-purulent, tenacious description, and unmixed with blood. In his right side, below the nipple, he has a good deal of steady pain, which is aggravated when he coughs. His bowels are rather costive. Pulse full and regular ; tongue clean ; urine of a deep red colour, and depositing a lateritious sediment.

History.—States that about twelve months ago he first felt pain in the infra-mammary region of the right side, where he at present complains of pain. Had often had it blistered with blistering vinegar and by fly-blisters. Some weeks ago his cough was very distressing, with very copious expectoration, and he spat some blood at the same time. His father and mother lived to an old age, and his friends have all been healthy. He attributes his complaint to cold and wet. Was treated as a case of bronchitis and pleuritis.

November 22d.—He declares himself as much improved, and free of the stitches which were so distressing to him on admission. His cough is also easier, but the sputa are as before—muco-purulent, but occasionally tinged with a little blood. Discharged.

He was re-admitted upon the 7th February. Since he left the hospital, on the 22d November last, he has been once or twice back as an out-patient. His

chief complaint on these occasions was a swelling in the right axilla, attended with much pain. He also complained of great sweating on this side of the head, neck, and shoulder,—to such an extent, indeed, that the water ran from the surface. His cough had not been worse, and he had little or no expectoration. The right side is still manifestly less moveable than the left in respiration, and the infra-clavicular region flattened. There is seen under the outer end of the clavicle, and extending into the anterior part of the axilla, a swelling, quite solid and hard, and without pulsation, and the handling of which gives little pain, unless it is pressed much. Its surface is not irregular. It cannot be moved. In the axilla the skin over it is a little red and broken, probably from poultices he had been using; but there is no discharge. Can move his shoulder, and the tumour does not feel as if connected with the joint. There are bronchial râles on both sides, with some greater loudness and roughness under the right clavicle. Still perspires, as he says, on the right side of the head and neck only. Pulse about 80; tongue clean; bowels rather costive. Has in a good measure lost the strength of the right arm, and feels generally so much weaker, that he had great difficulty in coming up to the hospital.

February 20th.—Since his admission, the tumour in the axilla has become considerably larger, and feels hard and rather irregular on the surface. He still complains much of the sweating or running down of water on that side of the upper part of his body ; cough almost none. He was dismissed at desire.

Was re-admitted 19th June. The tumour, mentioned in the former account of his case, has increased very rapidly, gradually occupying the whole axilla and upper part of that side of the chest, and at present having the following appearances :—In front it extends forwards to a line drawn vertically to the mamma ; below, to about the fourth rib ; above, it comes so close to the shoulder as partly to surround the joint ; behind, it is ill defined by manipulation, but seems to extend backwards between the venter of the scapula and the ribs. The scapula itself is raised, its external angle being carried upwards and inwards, and its superior angle pushed close to the spine. It inferior angle is elevated and brought forwards, and at this spot a blush of inflammation exists, in the centre of which, corresponding to the angle of the bone, is a small slough. The skin covering the tumour is in some places of a purplish red colour, particularly at the lower part of the axilla, and in this situation the integument is very thin. The tumour is everywhere dense, hard, and but slightly moveable, and does not fluctuate at any point. From its great lateral projection, being fully larger than a child's head, it prevents approximation of the arm to the side, and the weight of the extremity is therefore in a great part sustained on the upper surface of the swelling. The cavity of the shoulder-joint seems free of the disease, and admits in some degree of all its natural movements. The arm is not œdematous, but he experiences in it severe fits of pain, and, without corresponding external impressions, great varieties of temperature. He still alludes to the great amount of sweating which he has on this side of the head and neck,—the water, he says, often trickling down the side. (This has several times been noticed since he came into the ward.) The artery still beats at the wrist, but more weakly than in the opposite arm; the right limb is not more wasted than the other one. The mamma on the right side does not seem to be implicated in the disease. His chest sounds are similar to those observed when he left the hospital. ˙ The sputa are glairy and muco-purulent, but not very abundant. The pain in the tumour is paroxysmal and lancinating, and causes him at times much distress. He gets no sleep except under the influence of opiates. Dismissed at desire.

This patient died a few days after he went home, and I did not receive intimation of his death until some time after he had been buried.

CASE VII.—*Cancerous Mass in the Mediastinum—Tumour above the Clavicle, and on the Sternum—Cancer of the Bones.*

John Gordon, æt. 55, wood-turner, of a stout and rather apoplectic build, was

admitted into St Luke's Ward, October 30th, 1847, with the following symptoms:
—A hard swelling over his windpipe at the top of the sternum, not tender when
manipulated, but occasionally the seat of dull shooting pains, constant though
slight vertigo, occasional pain in his head and between his shoulders.   He states
also, that when he stoops to pick up anything from the ground, his face and ears
become livid and swollen, his head gets dizzy, and if he continues the posture
long he falls down insensible. He is sometimes troubled with palpitation of the
heart, and he cannot make any unusual exertion without being attacked by urgent
dyspnœa.   He swallows fluids with ease, but has some difficulty in getting over
solids, especially if they have not been previously well masticated in the mouth.
States that nausea, vomiting, and hiccup come on almost after every meal, and
very much distress him.   He has, in addition to all these symptoms, a trouble-
some dry cough.   Tongue clean ; bowels costive ; appetite good ; pulse 96,
small, compressible, and alike in both wrists.   Some swelling is evident to the
eye upon examination in the supra-sternal region, and a hard solid body can
be distinctly felt, which seems to have firm attachments, and affords no sense
of pulsation in whatever mode it be handled.   A feeling is also conveyed as if
the upper portion of the breast bone were somewhat more projecting than natu-
ral.   Over the tumour, and for a little way down and to either side of the
sternum, percussion elicits a dull sound.   Acute pain is complained of when
the part corresponding to about the junction of the two third ribs with the ster-
num is pressed upon or percussed, but there is no tenderness in the swelling
itself.   When the ear is applied over it a rather rough bruit is audible, accom-
panying the first sound of the heart, and heard for a little more than half way
down the sternum, and also at the base of the heart, but becoming less distinct
towards the apex, where it is entirely lost.   This bruit is loudest immediately
over the swelling in the neck, and for a small distance down the sternum.
Both jugulars, especially the right, are very prominent, and much distended
with blood, but not pulsating.   No abnormal extent of dulness can be disco-
vered in the præcordial space. Heart's impulse normal as to degree and extent.

   History.—States that he has worked the circular saw for some time back.
He has been a hard drinker, but has enjoyed, upon the whole, tolerably good
health.   Has been troubled with nausea, vomiting of his food, and dizziness
in his head for eight or nine weeks ; but his attention was first particularly
directed to his present complaint about a fortnight ago, when, having stooped
to pick up something from the floor of his workshop, his face, it is said, be-
came black, and he was for a short time completely insensible.   This alarmed
him, and he applied forthwith for medical assistance.   The swelling in his neck
was then discovered, and he had a little blood taken from his arm, leeches
applied to the tumour, and a blister below the chin, and these measures afford-
ed some temporary relief to his uneasy feelings ; but seeing no prospect of
permanent improvement, at the advice of his medical attendant, he came to
the hospital.   He was put upon an alterative course of blue pill, and the tumour
in the neck was painted with tincture of Iodine.

   November 6th.—Had another attack of fainting or syncope last night, which
was preceded by a feeling of sickness and a disposition to retch.   Is not con-
vulsed in these attacks, but lies in a state of faint.   The neck is excoriated.
A small tumour can be more distinctly felt rising from under the clavicle.
The bruit is heard as before.   Is to attend as an out-patient.   Dismissed.

   December 28th.—Was visited to-day at his own house, where he has been
confined almost to bed since he left the hospital.   On looking at the sternum,
the superior part of it is now enlarged into an irregular, hard, and broad, but
not very prominent tumour, the skin over which is assuming a dark red colour.
It is not painful to the touch.   Over the interstice of the second and third rib
there is an obscure degree of pulsation.   On the middle of the sternum there
is an elevation of a diameter greater than a crown-piece, of a reddish colour,
firmly attached to, or rather forming part of, the external table of the bone,
but not raised more than a quarter of an inch above the surface of the sternum.

This too is not painful to the touch. Is complaining of more difficulty in swallowing, and of cough. Is much more wasted than he was when he was in the hospital. Has been using the pills, but left off the iodine.

January 13th.—Was seen again to-day ; appears very much emaciated, and is jaundiced, the conjunctiva being of a deep yellowish green colour. This change took place about ten days ago. Feels very weak and unable to leave bed. The swelling at the upper part of the neck has increased, so as to occupy all the space between the chin and the first bone of the sternum, the latter being entirely involved in it. The swelling over the middle portion is also increased. No pulsation in any part. No tumour or hardness felt in the region of the liver. Is using wine and opiates.

February 27th.—Information was received to-day that he died yesterday. Little or no alteration had taken place on the symptoms, except that the difficulty of breathing was increased, and his appetite gone. The right upper extremity was very œdematous for some time prior to death. Had been living chiefly on wine.

Autopsy thirty hours after death.—While dissecting away the integuments and muscles from the anterior and upper portion of the thorax, one or two small masses of a semi-cartilaginous consistence were cut into by the knife, and after the whole of the sternum had been fully exposed, the swelling on its central part was seen evidently to have the same structure as these, and to correspond in situation to the junction of the third, fourth, fifth, and sixth costal cartilages. On making sections of this tumour, the same semi-cartilaginous appearance, as above described, was presented, with here and there some softening, like thick cream or curd ; and the sternum was observed to be in some places much thinned and very easily cut by the knife, and in others had become altogether confounded with the substance of the swelling. A very large irregular mass was brought into view, occupying the upper part of the thorax, and the anterior and lateral portions of the cervical region, extending backwards as far as the spine (to which, however, it was not attached), closely adherent to the superior surface of the fibrous pericardium, and also, but less closely, to the apex of the right lung, reaching as high up on the neck as the front and sides of the thyroid cartilage, and implicating more or less the following parts :—the thyroid gland, larynx, trachea, bifurcation of trachea, bronchial glands, œsophagus, vena cava superior and branches, and the arch of aorta, and great vessels proceeding from it. On removing the whole for examination, the state of parts was found to be as follows :—The trachea and œsophagus were both much pressed upon, particularly the latter, being surrounded for about three-quarters of their circumference by the cancer. The anterior surface of the arch of the aorta was also firmly connected to it, but did not appear to have sustained much pressure ; but the arteria innominata was deeply imbedded in the substance of the tumour, displaced obliquely upwards, and evidently contracted in its calibre, while the carotid of the left side was so much reduced in diameter, as barely to admit a very small bougie. It should have been mentioned, that the sternal ends of both clavicles were much involved in the disease, and gave way readily before the knife ; and that the upper bone of the sternum was directly continuous with the tumour in the neck and inside of the chest, its proper structure being almost altogether obliterated and confounded with that of the cancerous mass. There was considerable effusion of a reddish serum into the pericardium, and the left pleura was about three-quarters filled with the same. The right lung was everywhere connected to the walls of the chest by close but easily broken down adhesions ; and the costal pleura was lined with a thick layer of yellow adhesive lymph. The substance of both lungs was healthy. The heart was about the ordinary size, or even a little less. Two of the semilunar valves of the aorta were found considerably ossified, and also somewhat puckered, so as not to close the aortic orifice. The mitral valves, and those on the right side, were all perfectly healthy. The walls of the right ventricle were not much

thicker than usual, but those of the left were about an inch and a-half in thickness, and the cavity of the ventricle was also much smaller than ordinary. On laying open the abdomen, the gall-bladder made its appearance, immensely distended with very dark green bile, and projecting to a considerable distance below the edge of the liver; the latter did not appear to be much enlarged, but was throughout its whole extent of an extremely dark green colour; and being cut into, exuded bile abundantly from a number of greatly dilated ducts, some of which were as large as, and others even larger than, a common goose quill. A mass of carcinoma in the head of the pancreas involved the ductus communis choledochus, pressing upon all the parts lying adjacent. No tumour in the pylorus.

Microscopic Examination.—On submitting a drop of the cream-like fluid which could be squeezed from the surface of the tumour, to a power of about 250 diameters linear, a number of cancer cells were seen, varying from one-half up to twice the size of a pus corpuscle. These were irregular in form, some being round, others oval, and presenting slight indentations on the margins. Besides a number of small granules, they contained, in some cases, nuclei of about one-fourth the size of the cell itself; these again occasionally containing nucleoli, but in many of them both nuclei and nucleoli were absent. Mixed up with these cells were numerous compound granular masses, of a roundish form, and several could be seen in a state of partial disintegration. Acetic acid rendered the cell walls slightly more transparent, but otherwise produced no change upon them; they floated amidst a multitude of loose molecules and granules. On making a section of the yellow cartilaginous-looking portion of the tumour, it was found to consist of numerous cells in different stages of development into fibres. Several of the cells presented an irregular caudate appearance; but the majority had elongated into fibres, possessing the characteristics of the white variety, and containing a very evident nucleus. The result of the examination of a portion of the tumour under the microscope was to this effect, that, strictly speaking, it is neither "scirrhus" nor encephaloid, but a combination of *both*, although, from the quantity of fibrous element it contains, it belongs more properly to the *former* than to the *latter* variety.

These are instances where the disease, originating internally, declared itself very soon by its appearance on the surface of the chest. The next case is one where the complaint was much more obscure, and is in a great measure identical with the two cases of internal cancer of the thorax, detailed in my former paper. There is, however, this difference, and I wish to point it out strongly, that there was, in the following case, no *swelling* or *tumour*, nor even *puffiness*, in the neck or above the clavicle of the affected side.

CASE VIII.—*Cancerous Mass in the Mediastinum and left side of Chest.—No Tumour above the Clavicle.—Pericarditis.*

George Mitchell, æt. 47, hairdresser, of a spare habit of body, and rather sallow aspect, was admitted into St Luke's ward, 18th December 1849, complaining of weakness, dyspnœa, and pain in the præcordial region.

Physical Signs.—Body wasted; chest rather narrow. Some slight pulsation visible between the second and third ribs of the left side. On laying the hand on the right and left side alternately, while he is speaking, the vibratory thrill is felt only on the right side. Percussion gives a clear sound all over the right side; on the left it gives a dull one down to a line drawn from the nipple to the back parts of the chest, immediately below which the dulness is less marked. On the right side of the chest the respiration is puerile; on the anterior and lateral parts of the left the respiratory murmur is altogether absent,

but can be faintly heard about the middle of the scapular and infra-scapular regions. In place of the heart's sounds there is heard a loud and rough sawing sound. This abnormal sound is rather loudest towards the apex of the heart, and although heard along the ascending portion of the aorta, becomes much less distinct. The pulsation of the right carotid is very visible, causing a pulsatory movement in the external jugular vein. No sensible pulsation of the left vein. Has a hard cough, accompanied with almost no sputa. Has no difficulty in swallowing his food; but on taking even the slightest quantity of any liquid his cough is immediately brought on. There is no puffy swelling above the clavicle, or swelling of any of the glands. Respirations thirty-two in the minute. Pulse 100, regular and full, but rather weaker on the left than on the right side. Tongue clean; appetite good; bowels very costive.

History.—States that he has been a precentor for the last twenty years, and has also been in the habit of singing a good deal otherwise. Was much exposed to wet and cold during last winter, from wearing bad shoes. Was always a good deal addicted to the drinking of ardent spirits. Says he first began to feel pain about three months ago, over the heart, which has continued shifting to different parts, but has been chiefly seated on the left side. Was soon compelled to give over singing, as much exertion has always caused great difficulty of breathing and a tightness in his chest as if it were constricted by something. Has never had any bloody or rusty expectoration nor palpitations; but being of a nervous disposition has always been easily excited. States that shortly before his admission he had one or two fits which continued for an hour or two, affecting only the left side of his body, from his chest down to the foot. These were marked only by a greater difficulty of his breathing, and convulsive startings along the left lower extremity. Was quite sensible during the time these lasted. Has never had any giddiness nor pain in his head, neither has ever had any swelling in any part of his body. The huskiness of his voice has only existed for a short time, and there is no accompanying pain. A short time ago, also, he began to feel a more than ordinary weakness in his lower limbs, so that, on his walking, it is noticed that he drags his legs, particularly his right one. His father and mother have been dead for a long time, but he has a sister alive who is much troubled with swelling over her body and difficulty of breathing. Has been using some medicines and had a blister applied to his chest, but with no benefit.

28th.—Had an attack like a violent angina pectoris four nights ago, but it has not returned. Complaining much of weakness, but has no pain or uneasiness. The sawing sound over the heart and aorta has disappeared. The dulness is, as before, confined to the clavicular and mammary regions. Elsewhere the sound is clear, and respiration also heard. Enlargement of the veins on the upper part of the surface of the chest is very conspicuous. Pulse 100. Is getting a little wine.

8th January.—Last week he thought himself considerably better; but during the last three days he has been complaining much of weakness and difficulty of breathing. His expression is very anxious, his voice husky and hollow, and his cough harsh and ringing, but without any expectoration. Pulse, 120; tongue clean; bowels inclined to be loose. In the physical signs, no change can be noted, except that the dulness is rather increased downwards, and the upper part of the chest in a slight degree more prominent on the left than on the right side. He also feels much pulsation internally over the left side—such being his own statement. He is getting a little brandy. No appetite.

10th.—Could not swallow the brandy—can only get over with ease a pultaceous food, such as porridge, or a soft-boiled egg. Has great thirst; but when he swallows a mouthful of fluid, his face becomes immediately red, and a severe cough takes place. He says that he thinks he would choke, if he were to repeat the mouthful. Refers the uneasiness and difficulty of swallowing to a little below the pomum Adami. To have wine, which he likes best, and an opiate at night.

13th.—At the visit yesterday, he appeared much the same as at last report; but during the day the dyspnœa increased; and, becoming gradually weaker, he died at eleven o'clock P.M.

Autopsy twelve hours after death—(This inspection took place under very adverse circumstances, being made contrary to the wish of the friends; so that the examination was confined to the chest, and made hurriedly.)—Body emaciated. Two tumours (glands enlarged to the size of walnuts) were seen in the right groin. An incision was made from the neck to a little below the sternum. When the bone was removed, there was seen, attached to the left side of its under surface, a small tumour, of the size of a large nut, which cut like cartilage. On looking into the chest, a whitish membrane presented itself, which proved to be an organised layer of lymph, extending from the clavicle to the diaphragm. On laying the hand where the trachea and large vessels should be, a firm, irregular mass was felt. On passing the hand over the upper end of this, it could be with some difficulty carried downwards and backwards to the spine, to which the tumour was adherent. Neither the aorta and its large vessels, nor the bronchi, could be felt. On attempting to tear away the mass, it broke in some parts, and gave exit to a cerebriform matter. On examining the pericardium it was found thickened by the above layer of lymph on its outside, and internally it adhered to the heart, over the whole extent of the latter. The adhesion, however, could be broken up by the finger, and the heart was turned out. It was rough and shaggy on the surface, but not hid nor entirely covered by the shaggy lymph. It was of the natural size. The hand was then carried close to the ribs, where the left lung was found to be lying close to the diseased mass. There were no adhesions of the pleura pulmonalis to the pleura costalis, nor any fluid in the pleura. The right lung was not visible, the above described membrane covering the whole of the space under the sternum, and adhering to the cartilages of the ribs of the right side as well as the left. On making a way through it with the fingers, the hand was carried into the right pleural cavity, and the lung easily turned out. It was perfectly healthy from apex to base, but had one or two slight adhesions, by old bands, to the ribs. The whole contents under the sternum and to its left side, from the neck to the diaphragm, including the heart and part of the left lung, were removed and examined. When the parts were thus removed, the heart was found healthy in all its valves. Its ventricles were normal in all respects, but the auricles, especially the right, were pressed on by the mass of disease; and an irregularity in the upper and posterior part of the right auricle was visible, arising from the irregular surface of the tumour projecting inwards, and pushing the wall of the auricle before it. In the tumour, and passing nearly through its centre, was seen the aorta, the coats of which were healthy. The arteria innominata, and the left subclavian and carotid arteries, arose from the aorta, within the same mass, and stretched through it to their usual course. The left pulmonary veins also passed through the mass of disease, and were much contracted by it. The left bronchus was likewise imbedded in the tumour. The exact relation of the œsophagus was not ascertained, but it must have been more or less compressed, as was evinced during his life. The larynx was not removed for examination. The left lung was much condensed in its upper lobe, and solidified, not by any carcinomatous deposit, but by pressure and chronic pneumonia; the lower lobe was natural. The microscopic examination of a portion of this diseased mass gave the same result, indicative of its encephaloid and scirrhus structure, as in some of the former examples.

The next case is very similar to the preceding one. It was characterised by the puffy swelling, and the small hard tumour, of the neck. No doubt was entertained of its nature. The partial sweating on one side of the head and trunk was similar to that met with

in Case VI. The cause of this I do not pretend to explain. No doubt, it was in both dependent upon pressure, but on which vessel, or why this should have been the result on one side, I cannot explain. The advance of the disease into the substance of the heart has not, I think, hitherto been observed in cases of this kind. The adhesion of the pericardium, as the result of a subacute pericarditis, we find here also.

CASE IX.—*Cancerous Tumour in the Mediastinum and Left Side of Chest.—Tumour, and Puffy Swelling in the Neck.—Cancerous State of the Heart.*

Mr ——, æt. 58, of a bilious temperament, middle-sized but well-knit frame, of active business habits, and taking much exercise, was observed by his friends, in the months of October and November 1849, to be looking sallow and careworn, and falling off in flesh. It was well known that he had been exposed to considerable mental anxiety, in connection with the extensive business in which he took a leading part, in the commercial panic two years previously ; but, as these difficulties were all past, his apparent illness could not be put down to this cause. He had always been in the way of living generously, and took his wine daily. In the beginning of November he had a hard barking cough, unattended with expectoration, and with some feeling of uneasiness in his chest; but he attributed it to a bilious or deranged state of his stomach, and was inclined to treat it lightly. At length he permitted his medical attendant to examine his chest, and he at once detected dulness over the upper part of the left breast, and absence of respiration. I saw him on the 31st of November. He had a rather sallow, anxious appearance, and a frequent short, dry cough. Pulse about 110, regular but small, and equal in both wrists ; tongue furred in the centre; appetite indifferent ; bowels rather costive. On exposing the chest, a puffy swelling was at once observable above and towards the posterior third of the clavicle ; and towards the inner third, and under, in part, the sterno-cleido-mastoid muscle, there was a small hard tumour, about the size of a chestnut, unattended with pain, and immoveable. It was evidently rising from under the clavicle. No marked difference was visible in the form of the chest; but the clavicular and mammary regions of the left side were not moved in respiration to the same extent as the right. Percussion elicited a dull sound from the clavicle down to below the mamma, and below this the sound became clearer. The dulness was not so marked posteriorly, except over the upper part of the scapela. No vocal fremitus was felt over the dull part. Respiration was not heard over the dull part of the side anteriorly, but was audible, and of a tubal character, behind, and especially below. The right side gave a loud clear sound on percussion, and respiration was puerile. Nothing abnormal could be detected as to the heart ; and nothing wrong could be felt by manipulation in the abdomen. His voice at times was husky, or a little feeble. He could take a deep inspiration without feeling the least pain in any part; and could swallow fluids and solids without the slightest difficulty or uneasiness. A blister had been applied over the chest. He was put on two grains of blue pill every night, which caused slight salivation, and attention was paid to his stomach and bowels. On the 7th December he went to London, his friends having been made aware that this was a tumour, most likely cancerous in its nature, in the chest. He there saw several eminent medical men, and they concurred in this opinion. After trying the use of iodine, which was soon found not to agree with him, he used Brandish's alkaline solution, and his appetite improved under it. But the tumour increased, and on the 27th of February he returned to Aberdeen, having consulted some of the principal physicians while he rested a day in Edinburgh. They also concurred in the same view of the case. When examined on his return, this was his state :—His body was much reduced, his

expression very anxious, and he was fidgetty and restless. His voice was much feebler. His left arm lay useless at his side. He could not raise his arm, though he could move his forearm a little, and grasp pretty firmly. He complained of a continuous uneasy feeling in the arm, which caused him to be constantly moving it about by the aid of his other hand. The fulness of the neck was much more decided; and the tumour was evidently increased in size, extending upwards, and also backwards towards the spine, and forwards to the trachea. Its surface was rather roundish, solid, but not very hard, nor very irregular. The dulness was not greater, perhaps rather less, over the anterior part of the left breast, and the respiration was heard rather higher up than before he left. No bruit nor abnormal pulsation. The side of the chest did not appear fuller than the opposite one, but was decidedly less mobile. Could lie on his back only. Pulse equal in both wrists, small, and from 110 to 120; tongue clean; appetite good; bowels costive since he had commenced his journey northwards. He had rather copious nocturnal perspirations, chiefly about his head. Had been getting some acetate of morphia in London, and now required about two grains a day, in divided doses. It soothed his irritation, and at night gave him sleep. No alteration was made in the treatment on his return. His bowels were opened by castor oil; and, as he expressed an anxious wish to make use of cod-liver oil, he was allowed a teaspoonful three times a-day. On Thursday (the 7th) he had some cough, with a good deal of wheeze. In the evening he had considerable tracheal râle, and a disposition to clear his windpipe by coughing, but could not get the secretion up. (In London he had some attacks of the same kind, attended sometimes with much retching, which brought up a frothy thick mucus from his windpipe.) For the first time he found himself unable to lie low in bed. Some expectorating mixture, aided by a little ipecacuan wine, gave the required relief, and, by means of a dose of his morphia, he passed a good night. He perspired much, and I noticed that the perspiration was confined to the right side of the head, neck, and trunk, ceasing exactly at the mesial line on the head (easily distinguishable by his being bald) and face. It ran down in large drops, and his shirt on this side was soaked with it. Next day he was still coughing, and the râle was not less, though at times he got up frothy sputa. A wheeze, with crepitation, was distinguishable over the chest, before and behind. His feet and legs were cold, and his hands and arms, and especially his nails, were bluish. He sweated still when he dropped, at times, asleep, and still only on the right side, and to so marked a degree, that it was observed by every one who approached him. Expectorants were used, and ipecacuan wine given once or twice so as to produce vomiting, and carbonate of ammonia taken at intervals, with occasional doses of his morphia, for which he called often and loudly during the night. At seven in the following morning, whilst I was sitting with him, he called for his morphia instantly, or he would die; and he had not a minute swallowed it when he gave a gurgle, and, after a few respirations, he was gone.

A post-mortem examination was not obtained till the fifth morning after his death. Body not exhibiting much marks of decomposition. No difference in the appearance of the tumour in the neck, and the chest sounded as dull over the left side as before his death. An incision was made down to near the pubes, and crossed by one in the neck, along the upper margin of the tumour. The cartilages of the ribs were ossified, and required to be divided by the saw; and the left clavicle seemed almost as hard as ivory. The sternum was raised and removed with part of both clavicles. The muscles on the side and anterior aspect of the neck were cleared away, and the dissection also carried into the axilla and arm. Lying on the mediastinum, and covering the tumour both here and in the neck, was a considerable quantity of adipose tissue. The tumour in the neck extended towards the trachea and larynx, but did not lie over the tube, having pressed it a little to the right side. Close to the trachea the tumour was soft and creamy; in the other direction it extended outwards,

and came in contact with the trapezius muscle ; and had advanced so far into the axilla that the axillary plexus emerged from about the centre of the mass. A portion of the tumour was in close contact with, but not adhering to, the uppermost lobe of the right lung near its apex. The right lung was entirely free of adhesions, and easily removed. The left pleural cavity was closed by adhesions to the ribs for a little way behind the cartilages ; but the fingers, once entered, easily separated the adhesions, and the space from this backwards to the vertebræ was found free, and contained about twenty ounces of a reddish serum. The lung was closely adherent to the mediastinal tumour and the pericardium. It was flattened or compressed into less than a third of its ordinary volume, but was at once distinguishable by its bluish colour and by its spongy texture. Its lower lobe adhered by its base to the diaphragm, and was not so small or compressed as the upper. The heart was next examined *in situ*. The pericardium was adherent to the heart throughout by a soft lymph. The root of the vessels was encroached on by the cerebriform mass, the pulmonary artery being surrounded by it from its origin, and the growth had advanced upon the ventricles to nearly a third from the base. The encephaloid substance could not be separated from the muscular fibre, without tearing the latter. The trachea was then divided, and the contents of the chest removed. The oesophagus was to the right of the tumour. There was none of the mass upon the trachea or right bronchus; but the left bronchus was completely surrounded by it, as were the arteria innominata, the left carotid and subclavian, the arch of the aorta, and the left branch as well as the main branch of the pulmonary artery, and the left pulmonary veins. The apex of the lung was free of the disease, but, as the posterior part was approached, the encephaloid mass made its appearance in it. In other parts, some small nodules, of the size of large peas, and exactly of the character of the large tumour, were found. It contained air, but its buoyancy in water was omitted to be tried. The tumour was not affixed to the spine nor to the clavicle, but a small bit of it appeared adherent to the under surface of the sternum. It was of a white colour throughout. In some parts it broke down like brain ; but the greater part of it was firmer, though no part of it so hard as hard scirrhus. The right lung was of the full size. The margins of its lowest lobe were emphysematous. One or two puckered indentations, like cicatrices, existed in its apex. When cut, it exuded a large quantity of frothy fluid ; and towards the apex it felt rather solid, and easily broke down under pressure of the finger, being congested, and to some extent hepatised. No fluid in the pleura. The liver was perfectly healthy ; not a trace of carcinoma existing in it, in the pancreas, or in the mesentery.

From these cases, it will be seen that this disease sometimes takes place in the more superficial and solid parts of the thorax, and extends both outwards and inwards ; and, at other times, that it commences internally in the soft parts, and more especially in the mediastinum, encroaching, in these latter instances, also on the adjacent structures. It has been stated, that these cancerous affections oftenest take their origin in bone, or its periosteum ; but, whilst admitting that, in many cases, bone is involved early in these diseases, I see no reason for limiting their earliest development to this tissue. It would appear, from some of the preceding cases, that the patient lives longer when the disease is superficial, than when it commences deep in the chest. The hard scirrhus form seems to be that most frequently commencing in bone, whilst the soft encephaloid form oftener occurs in the soft structures, and is, as might be expected, more rapid in its course.

A preparation, identical with that found in the preceding cases of mediastinal cancer, is mentioned in the catalogue of the anatomical museum of St Bartholomew's Hospital, page 274; and another in the catalogue of the museum of the Royal College of Surgeons in Ireland, vol. ii., page 184. Dr Bennett, in his work, on "Cancerous and Cancroid Growths," gives, at page 44, a case similar to the preceding, with the microscopic examination of the morbid structure. He observes that—"This is the only case of cancer of the lung which I have ever met with; so that I presume the disease rarely attacks this organ in Scotland. There are few specimens of it even in the museums of Edinburgh, whereas they are common in the large pathological collections of Dublin." The most valuable account of this disease is to be found, along with a reference to most of the cases hitherto published, in Dr Walshe's valuable work on the "Nature and Treatment of Cancer," page 338. In the January Number for 1850 of the "Monthly Journal," there are some valuable cases, by Dr Hughes, of disease of the chest, exhibiting very closely the characters of the cancerous affections reported in this paper.

As to the diagnosis, it will be easily enough made out when the disease appears in connection with any of the bones, and forming a tumour on the surface of the chest. It may be, at the same time, extending inwards, and we may have a degree of pulsation in it, and a bruit may be heard over it. But its solidity, its generally dusky red, or slightly livid colour, the enlarged veins ramifying around and over it, and the history of its probable cause and early appearance and growth, will be sufficient to assure us of its character.

When it occurs within the chest, and in the soft parts, there is almost always a puffy tumour, or some hard swelling, in the neck of the same side, a prolongation, as it were, of the disease which has shot up under the clavicle, where there is space for it to advance. In my former paper, I dwelt strongly on this swelling as a sure sign of the disease, when attended with the dulness on percussion over the same side of the chest; but Case VIII. (Mitchell) is an instance where this sign did not occur. It may have been present in the cases of other medical practitioners, but its presence has not been universally reported. Dr Blackiston, in his most sensible and practical work on "Diseases of the Chest," gives only one case of this kind, and he notices the puffy swelling of the neck as one of the signs.

The diagnosis of the internal disease may be made up from more or less of the following particulars :—

1st, The individual is past the middle period of life.

2d, He has much of the haggard and dirty sallow countenance of malignant cachexia, so that his friends may be speaking of his sickly appearance before he himself is complaining.

3d, The pulse is quick, generally not under 100, and some difference will be likely found in the pulsation of the carotid and the

radial artery of the side affected, as compared with those of the opposite side.

4th, There is more or less of cough, generally ringing, short, and dry, in other cases attended with sputa; but I have never seen the latter of the appearance of "red currant jelly," as described by Stokes. It was watery, or holding in suspension merely a little mucus, and much like that met with in pleuritis.

5th, There is more or less dyspnœa, and attacks or paroxysms like those of angina. A feeling of tightness of the chest, huskiness, or loss of voice, and difficulty of swallowing, will also be present in the advanced stage of the disease.

6th, The appetite is for the most part impaired; and if the liver, the pancreas, or the pylorus, be affected with the same disease, there will likely be jaundice, and tuberose swellings felt by manipulation of the abdomen.

The physical signs will be :—

1st, The puffy swelling, or hard tumour, in the neck, as above noticed. If no swelling be found there, an examination should be made, supposing the case to be one where cancerous disease of the chest is suspected, of other parts of the body, to ascertain whether any signs of the disease exist in them, such as the axillæ, the groins, and the testes; and the belly should be carefully manipulated, particularly over the region of the liver.

2d, Dulness on percussion on one side, most distinct under the clavicle, and extending more or less downwards under the sternum of the same side of the chest. At the lower and posterior part, percussion will likely elicit a clearer sound, but yet by no means so clear as on the corresponding part of the other side of the chest. This dulness on percussion will, of course, be unaffected by any change of position on the part of the patient.

3d, The absence of respiration over the seat of the dulness, whilst it is heard, though probably faintly, behind and below.

4th, No fremitus when the hand is laid over the affected part of the chest, and the patient made to speak.

5th, The part of the chest giving these signs is not moved so freely in respiration as the corresponding part of the other side.

6th, The eye seldom detects fulness, unless the tumour be external, and, even if there is a degree of elevation, the intercostal spaces are not raised.

7th, If the disease is on the left side, there may be observed a more than usual pulsation between the first and second, or second and third ribs, whilst the motion of the heart in the præcordial region is weak and distant. There will also be most likely bellows sound, heard best at the junction of the second and third ribs with the sternum; or there may be the double see-saw, or the rubbing sound, of pericarditis.

The diseases with which it might be confounded are pneumonia, tubercular deposit with hepatisation, pleuritic effusion, and aneurism.

Acute pneumonia will, I think, unmistakeably indicate itself very readily. Tubular respiration, the signs, probably, of a cavern, the nature of the cough and sputa, with the early history of the case, and even the appearance of the countenance, to one experienced in phthisis, will detect the latter disease.

Pleuritic effusion is seldom confined to the upper part of the chest —in fact, can only be so where adhesions of the lungs to the ribs prevent the gravitation of the fluid to the lower parts. Indeed, in my experience, pleuritis, when arising not from adjacent tubercles, almost always is seated, and consequently has its effusion, in the lower part of the chest. The whole side may be dull, from its being occupied with fluid, the result of a pleuritis ; but, out of some hundred dissections, I have not any notes of the fluid being confined entirely to the vicinity of the apex or upper lobe of the lung, whilst I have many where it was confined, by adhesion above, to the part of the chest corresponding to the lower lobe. Besides, if there was a collection of fluid here, the infra-clavicular region would be full and rounded, and the intercostal spaces brought to a level with the ribs, or probably elevated above them.

Aneurism of the aorta, or (on the right side) the arteria inominata, seems to me the only disease for which a cancerous mass in this situation might be mistaken. When, for instance, in the case of Mitchell, I percussed the infra-clavicular region, and observed the pulsation, and laid my ear over the part, I could not help, at first, thinking, from the dulness on percussion, the absence of respiration, the loudness of the bruit, added to the non-existence of any swelling in the neck, whilst he complained of violent fits of dyspnœa like to choke him, that this was a case of aneurism ; but when I considered the great extent of the dulness, as compared with the amount of the pulsation—when I found no abnormal sound over the seat of the pulsation, and the *bruit,* or rather the see-saw, loudest over the heart itself—when I saw the superficial veins on the anterior part of the chest and in the axilla enlarged and tortuous—and when I took into consideration the length of time that the disease had lasted, and the appearance of the patient, I came to the opinion that it must be a tumour and a malignant one. Trifling as to many might appear the circumstance of the existence of swelled glands in the groin, I confess that had I known of them before the patient's death, they would have helped me much in my diagnosis. I do not pretend to lay down any decided signs of aneurism within the chest where no external pulsating swelling exists ; but in several cases of this disease I have come to a fortunate *guess* by depending upon the limited extent of dulness, the limited extent over which a whiffing sound is heard, and upon, as much as anything, the peculiar, dry, hard, barking cough, which often seemed as if the patient were making the cough for effect's sake.

Before concluding, I may state that cancerous disease in the chest is sometimes secondary to that disease in some other part of the body, and is, consequently, merely a farther development of a constitutional affection, as in the following case.

CASE X.—*Cancerous Tumours in the Liver, and Cancerous Disease of the Bronchial Glands.*

George Mackay, æt. 52, pensioner, had been admitted into St Nicholas' ward on the 17th September 1848, under my colleague, Dr Dyce, where he died on the 18th November. His symptoms were those of obstruction at the pylorus, as marked by vomiting of his food, by progressive emaciation with weakness, and by a hard swelling in the epigastric region. It was suspected that the tumour was in the liver, from there being enlargement of that organ.

Sectio-Cadaveris, twenty-eight hours after death.—Body very much emaciated. No swelling or hardness to be felt in the situation of the former tumour. (This I have repeatedly observed happening after death in enlargement of the liver from tumours and from disease of the heart, and doubtless arises from its containing a less quantity of blood.) On laying open the abdomen the omentum was found in the state of a firm or solid cake of nearly half an inch thick. It contained numerous small white tubercles, and here and there, on the peritoneal coat of the intestines, there were others, their size not being so large as half a pea. On looking at the liver there was seen projecting from its surface a large white mass of a rather soft or boggy feel, as if containing fluid, and which, when cut across, was found to be an encephaloid tubercle, of the size of an orange, semi-fluid in its centre. The liver contained numerous other tubercles from the size of a pea to a large hen's egg, all very white and firm internally, and having numerous attachments to the vessels in the liver, which seemed very numerous and large, more especially the veins. The liver was otherwise of its usual colour. The pylorus was natural, but the pancreas was much enlarged and hard, and a mass of diseased glands lay in the mesentery beside it. The small curvature of the stomach was beset with small white tubercles like those in the omentum. The lungs were in one or two spots united to the costal pleura by old bands. They contained no scrofulous or cancerous tubercles, but they contained many small black spots, with here and there black gritty particles. There was, in the posterior mediastinum, a large deposit of the white carcinomatous matter, which had probably been the cause of uneasiness behind the sternum and difficulty of breathing, and much more of swallowing, of which he complained before death. The heart was small. The arch of the aorta and pulmonary artery, and the origin of the vessels of the arch, were involved in the above mass, and a part pressed also on the œsophagus. The microscope proved the masses in the liver to be entirely cancerous.

Nor must it always be inferred, where we have tumours in the neck, or even in more suspicious places, as in the mamma and the axilla, whilst at the same time there exist symptoms of disease within the chest, that such must necessarily be cancerous. The following is a case that I had no hesitation in regarding as an example of scrofulous tumours with tubercle of the lung.

CASE XI.—*Great Dyspnœa.—Cough, &c.—Tumours of the Neck, and Tumour in the Mamma and Axilla.*

Eliza Millar, æt. 18, dressmaker, of a scrofulous appearance, was admitted into Lydia's ward, March 5th, 1850, complaining of difficulty of breathing, with pain, cough, and expectoration.

Physical Signs.—Body much emaciated. Centre of cheeks of a hectic red. Percussion over the chest elicits nothing abnormal. On applying the ear to the chest mucous râles are heard, accompanied by a cooing sound. They are heard over any part of either lung, particularly the upper parts, where there is, especially in the right lung, a degree of gurgling whenever she coughs. Heart's sounds natural. On the left side of the chest, under the clavicle, there is a tumour, and another extends from the mamma, in which it is partly situated, into the axilla. They are solid, but not uneven on the surface. There is also a chain of swelled glands in the neck. The latter swellings commenced about two years ago, but those nearer the axilla, and largest in size, commenced about six months ago.

History.—States that about eight weeks ago she came into one of the surgical wards, under Dr Keith, in consequence of having the above tumours. Has been under his care since, and has been affected with the same symptoms as now since her first admission into the hospital. The pain began in the right side of the chest, but now extends all over. It is not much felt unless on coughing and on taking a deep inspiration. Difficulty of breathing greater at one time than another. Cough occasionally severe, particularly during the night. Expectoration, which has lasted for four weeks, mucous, with patches of a tough consistency and yellowish colour. Pulse 96, feeble ; bowels regular ; tongue whitish. Has very little appetite. Thirst great. Skin hot and perspiration profuse, particularly during the night. Has not menstruated for sixteen weeks, but was regular up to that time. Is very subject to colds and sore throats. Spat up a little blood since her admission under Dr Keith, but never before. Her father was drowned, and her mother died of fever. Has no brothers or sisters. To have a blister to the breast, and demulcents.

March 14th.—The hectic is becoming more established. Voice feeble and husky. Pulse about 120. Perspiration over head and neck. Tongue soft, and covered in the centre with a yellowish fur. Bowels rather loose. The sound is clear on percussion under both clavicles, but a gurgling is heard when the ear is laid over the infra-clavicular region, mixed with large bubbling rhonchus, loudest on the right side. Imperfect pectoriloquy. Lies on either side. Cough soft, and attended with expectoration of a muco-purulent character. The tumours are as before. Some large veins are seen going to the largest tumour in the mamma and axilla. Takes almost no food.

March 30th.—Died this morning.

Sectio-Cadaveris, sixteen hours after death.—The chest only was examined. On opening it there were found in each pleura about 12 oz. of a clear yellow serum, mixed with some soft flakes of lymph, the left pleural cavity containing rather more of the serum than the right. Both lungs adhered partially to the ribs. The adhesions were with some difficulty broken down. In doing this on the left side, and attempting to pull out the lung, the fingers went into a cavern in the upper and posterior part of the lung near to the apex. The lung was loaded with greyish granulations. The right lung felt rather solid, especially in its apex. There was no cavern in the apex, but the lung here was dense, firm, and easily broken down by pressure. It was a mass of whitish and yellow tubercles, but still contained a little air, and exuded, when cut, a frothy fluid. Farther down, in this lobe, on cutting it across, the knife went into an abscess or cavern of the size of a small orange, containing yellow thick pus. The lowest lobe was also full of greyish miliary tubercles. The pleural covering of both lungs was partially rough or shaggy from deposits of lymph. The bronchial glands formed a mass of considerable size. A part of the mass cut out exhibited whitish-yellow tubercular matter, mixed with the usual dark bluish-black colour of the glandular structure. The tumour in the breast was of the cheesy, semi-solid consistence of tubercle, and the examination under the microscope confirmed this.

ARTICLE III.— *On the Habitual Use of Opium.* By ROBERT
LITTLE, Esq., Surgeon, Singapore.

(Abridged from the Journal of the Eastern Archipelago for January 1848.)

THE subject of the present paper has hitherto engaged the attention
of the Singapore government only in so far as it affords facilities for
raising revenue.   And if the public at large has taken any different
interest in it, this has been no otherwise shown than by the curiosity
of a few Europeans leading them to visit the opium shops, with
much of the same feeling and purpose with which others resort to a
menagerie or a lunatic asylum.   On entering these shops, the visitor
sees a crowd of squalid men crouching on a narrow board, in a small,
dimly-lighted, ill-aired apartment; and, unable to sustain the suffo-
cating atmosphere, he speedily makes for the door, persuaded, accord-
ing to his preconceived notions, either that he has discovered a canker
that is gradually eating into the vitals of society, or that he has wit-
nessed a dreamy way of spending money,—a more enjoyable curse,
perhaps, than drinking,—and no bad plan for raising the revenue.
But let the philanthropist follow the frequenters of these abodes of
vice to their own homes;—let him look upon them, when, reeling
from the effects of the drug, and heedless of wife or child, they sink
into a disturbed sleep;—or when, long after their industrious fellow-
creatures have been at work, they awake towards noon, with dry
tongue, cracked lips, parched throat, and unquenchable thirst, their
eyes sealed up or dropping rheum, their breathing oppressed, their
bones aching, their muscular force sunk in lassitude and languor, their
appetite extinguished, and in place of it a craving for one thing only
—and that is another draught of the poison which soothes but for
the moment,—let him reflect that he here beholds no overdrawn
picture of the fate of at least 15,000 of the inhabitants of Singapore;
and he will then admit that the subject is one of momentous conse-
quence, whether in reference to the unhappy destiny of the human
beings thus devoting themselves to misery, or the responsibility of a
government which turns that misery to profit.

The use of opium in medicine is of very early date, having cer-
tainly existed in the days of the Greek physicians.   But as a national
vice, it seems to have been unknown until the spread of Islamism,
prohibiting fermented liquors, led its votaries to supply their place
with other substances of analogous properties.   The natives of the
Eastern Archipelago probably imbibed their predilection for opium
from the Arabs; and yet they would appear to have derived their
mode of using it from the Chinese, as they almost constantly adopt
the method of smoking.   In China its use for other than medicinal
purposes is evidently recent.   In Chinese medical works it is men-
tioned only as a remedy.   In 1767 the number of chests annually
imported did not exceed 200; nor does it seem to have been ever

cultivated to any great extent in the country itself. But the vice of opium-smoking has spread in the Chinese empire with inconceivable rapidity. Even in 1796 it had become so prevalent, that it was denounced by the government as a punishable crime ; but the importation of opium went on steadily increasing, till in 1837 it amounted to 40,000 chests, of the value of five millions sterling. By a calculation founded on the average imports and average quantity consumed by one person daily, it may be inferred that there are 3,000,000 of opium-smokers in that country. By a similar calculation there would appear to be about 94,000 in Java, the population of which is understood to be about 9,000,000. These proportions, however, are as nothing compared with the extent of the habit in Singapore. After a careful inquiry at a number of opium-shops, it appears from the consumption of 299 smokers, that each man uses daily on an average 5½ *hoons*, or half a drachm of extract, which is equivalent to at least 50 grains of opium. But the monthly consumption of the whole island is 20 chests of 40 balls each, every ball weighing about 3½ pounds imperial. Hence about 15,000 persons in Singapore are smokers of opium,—an enormous number for a population not exceeding 70,000.

The right of preparing opium for smoking is restricted at Singapore by severe fiscal regulations, and in general the right is farmed by one person only. Every one is prohibited, under severe penalties, from importing less than a single chest, containing about 150 pounds. No one is allowed to sell less than this, except the owners of smoking shops licensed by the farmer-general. Opium cannot be smoked, out of private houses, except in these shops ; which must adjoin the streets. They must be closed at nine at night; gaming is not allowed in them ; and no one is permitted to enter them with arms in his possession.

The opium for smoking is prepared by the farmer-general from East Indian opium alone ; and little else indeed is used, except the Patna and Benares kinds, in balls. The balls consist of a case of agglutinated tobacco leaves and poppy petals, weighing half a pound, and about three pounds of opium, so soft as to be ductile. After the balls are divided, the opium is scooped out with the fingers into earthen dishes. The case is boiled in water to save what is left, the decoction being filtered and added to the opium. The whole is then evaporated to the consistence of an extract, with a strong carefully-regulated heat. This extract is again dissolved in water, and the solution is evaporated anew in copper vessels, to such a consistence as to admit of being fashioned into pills. The product, called *chandu*, is thus freed of the refuse, as well as of some of the resin, oil, narcotine, and extractive matter contained in crude opium, and it is thought in this way to become stronger as a narcotic, but less irritating. It amounts to between 50 and 60 per cent of the crude drug. The exhausted opium, called *tye* or *tinco*, is sold for use to the poorer

inhabitants; nor is even the refuse of the cases lost, being sold to Chinamen on their way to Canton, for the purpose of adulterating opium.

The quantity of opium consumed by a smoker varies greatly with the habit of each individual. One man was known to use daily 116 grains of extract, which is equivalent to fully half an ounce of opium. Another stated that he would smoke nearly thrice as much if he could afford it. But the average daily consumption of 603 persons was found to be 29 grains of chandu, or about 50 grains of crude opium each. By the working classes it is smoked entirely in the opium shops. The mode of procedure is well enough known, and need not be described here. The immediate effects are pretty uniform. "Nothing on earth can equal the apparent quiet enjoyment of the opium-smoker. As he enters the miserable scene of his future ecstacy, he collects his small change, with which he supplies himself with his quantity of chandu. Then, taking the pipe, which is furnished gratis, he reclines on a board covered with a mat, and, with his head resting on a wooden or bamboo pillow, he commences filling his pipe. As he entered, his looks were the picture of misery, his eyes were sunk, his gait slouched, his step trembling, and his voice quivering, with a sallow cast of countenance, and a dull unimpressive eye. He who runs might read that he is an opium-smoker, and if he could read still deeper, and dive below appearances, he would pronounce him an opium sufferer. But now, with pipe in hand, opium by his side, and a lamp before him, his eye already glistens, and his features soften in their expression, while he is preparing the coming luxury. At last it is ready, and the pipe being applied to the lamp, there is heard a *soughing* noise, as with a full and hearty pull he draws in all that opium and air can give," inhaling the smoke not only into the mouth, but effectually into the lungs. "Slowly is the inspiration relaxed, but not until all the opium in the pipe is consumed. Then, allowing the vapour to remain in his chest until nature compels him to expire, he gently allows it to escape, seeming to grudge the loss of each successive fume, until all is gone, when, exhausted and soothed, he withdraws the pipe, reclines his head, and gives himself up to the first calming effect of the drug. His next attempt confirms the comfort; and now no longer does he complain of racking limbs or aching bones, no longer does the rheum run from his eyes, and relaxed is the tightness of his chest, as he dwells with fondness on the inspiring pipe. The second pipe being finished, he can now look round on what is going on, but his soul is still wrapped in the bliss that is anticipated of what remains of his allowance; for not until a third or a fourth whiff do the feelings of positive pleasure arise. There is felt a lightness of the head, a tingling in every limb, the eyes seem to be enlarged, and the ears sharpened to hearing, an elasticity and inclination to mount on high are experienced, all pains are gone, and pleasure now remains; all weariness

has vanished, and freshness takes its place; the loathing of food previously experienced is changed to a relish for what is piquant, and a great desire is often felt for some particular food; the tongue is now loosened, and tells its tale, for whatever is secret becomes open, and what was intended for one becomes known to all. Still there is no excitement, but rather a calmness, soft, soothing, and sedative. He dreams not, nor thinks of the morrow; but, with a smile in his eye, he fills his pipe with the last of his allowance. Slowly inhaling it, he seems to brighten up, the smile that sparkled in his eye extends to other features, and his appearance is one of complete yet placid enjoyment. Presently the pipe is slowly displaced, or drops by his side; his head, if raised, is now laid on the pillow; feature after feature gives up its smile, the eye becomes glazed, the upper eyelid drops, the chin and lower lip fall, deeper and deeper inspirations follow, all perception is gone, objects may strike the eye, but no sights are seen,—sounds may fall on the ear, but none are heard; and so he passes into sleep, disturbed and broken, from which the wretched being awakes to a full conception of his misery." A state of languor, listlessness, and incapability of exertion succeeds, together with loathing of food, nervousness, aching of the limbs, gloom, and undefinable wretchedness,—a state from which he has no relief until the period comes round for renewed indulgence in the gratification which led to it, and which again infallibly induces it.

A difference of opinion prevails as to the ultimate effect on the health, when opium is used in this way so often as to constitute a habit. It was long universally thought to undermine health and abridge life. But in recent times doubts have been raised on this head. Dr Burnes was led to conclude, from observation when at the court of Lahore, in the time of Runjeet Singh, that the habit of eating opium does not tend to shorten life. More lately, Dr Macpherson came to the same conclusion, from what he saw of opium-smoking among the Chinese at Canton. And in Europe, since the inquiries on the occasion of the jury trial at Edinburgh in 1832, connected with the insurances of the late Earl of Mar, it has been thought by not a few persons of weight, that the habit of eating opium, or drinking laudanum, may be by no means so injurious to health and longevity, as its immediate effects on digestion and the nervous system would lead one to prognosticate. It may be true, as these sceptics have stated, that some people, long abandoned to the vice, have lived to a good old age, miserable from its immediate effects, yet not unhealthy. But the experience of most travellers, who have witnessed its effects on the large scale in the East, is directly the reverse; and although this proposition may be in some measure liable to the objection, that it is the statement of casual observers merely, it is amply borne out by the results of careful and extensive inquiries at Singapore. These inquiries were made by personally examining the owners of opium shops, the smokers who frequented

them, the prisoners in the house of correction, and the paupers of a poor-house supported by voluntary contributions. The following information is the result.

As the habit grows upon its unhappy victim, the first evils experienced are disturbed sleep, watchfulness, giddiness, sometimes headach, capricious appetite, a white tongue, frequently costiveness, indescribable oppression in the chest, and haziness of the eyes. Afterwards, a copious secretion of mucus takes place from the eyes, and often from the nose also; digestion becomes much impaired, and micturition difficult; a mucous discharge begins to flow from the organs of generation ; the sexual organs, at first preternaturally excitable, gradually lose their tone; the body wastes, the muscles lose their torosity, and the bones are affected with dull gnawing pains for some hours in the morning. By-and-by the figure stoops, and a peculiar shuffling gait is acquired, by which alone a practised eye may recognise an old opium debauchee. At the same time the eyebrow droops, the lower eyelid becomes dark, the eye itself seems to sink and grow dim, and the whole expression is that of premature old age. In both sexes the procreative power is greatly lessened, and in those women who nevertheless do bear children, the secretion of milk is defective. The influence of the habit on the generative functions is indeed so decided, that, were it not for fresh arrivals from China and other parts of the East, the population of Singapore would very soon be seriously diminished.

Still there may be no structural derangement. At length, however, food and drink are vomited almost constantly when the system is not under the primary action of a dose ; there is incessant gnawing pain in the stomach when its effect is off; diarrhœa comes on, relieved only by fresh indulgence, and dysentery sometimes supervenes ; a turbid mucous urine is discharged with unusual frequency, the result sometimes of vesical, sometimes of renal disease ; and among affections of the kidneys, Bright's disease is not uncommon. In others, difficulty of breathing is a prominent symptom, increasing gradually to an urgent sense of suffocation, and depending generally on œdema of the lungs, or effusion into the pleural sac. In others, irregularity and feebleness of the pulse, with pain in the cardiac region, indicate the supervention of organic disease, or severe functional disturbance, of the heart. Some suffer excessively from boils and carbuncles, from the latter of which few confirmed opium-smokers recover. Foul, indolent ulcers are extremely common among the poor ; strumous affections of all kinds are apt to be developed, and the constitution is prone to succumb without resistance under all violent diseases.

The influence of opium-smoking on the morals of its victims is not inferior to its impression on the bodily health. Indolence and inaction, neglect of business or work, and consequent poverty, though the most obvious, are not the worst results. Deeper depravity

often follows in the train of these evils. Wife and children are disregarded; frequently, however, not before they are inoculated by example or positive encouragement with the same unhappy vice. Misery leads at last to crime, and crime to deeper misery. Not unfrequently theft supplies the only resources for persevering in the fatal pleasure. Of forty Chinese prisoners in the Singapore House of Correction, no fewer than thirty-five were opium smokers. Seventeen of them, who had earned on an average eighteen shillings of wages monthly, spent nearly twenty-four shillings upon opium, the difference being necessarily made up by the gains of stealing. One of them, who earned twelve, but smoked twenty-four shillings, on being asked, how this was—how it was possible? aptly replied, "what am I here for?" The sedative action of the drug is well exemplified in the crimes for which these people were imprisoned. In Europe, where the habit of intoxication with ardent spirits adds fearfully to the contents of prisons, it is well known that crimes are committed chiefly during the excitement caused by the poison, and are therefore generally directed against the person. But the opium-smoker knows no such state of existence. His intoxication is quiescent. It is not till this stage passes off that he begins to think of crime; his object is to supply the means for the next debauch; and accordingly offences against property constitute a large proportion of the causes of imprisonment in this class of the population of Singapore. Of twenty-two opium-smokers in the prisons of Singapore and Penang, nineteen were condemned for offences against property, and only three for offences against the person. Opium-smokers constitute 80 per cent of those confined in the House of Correction at Singapore for vagrancy and police misdemeanours, but only 40, or at most 50, per cent of those in prison for larceny, highway robbery, burglary, and other similar offences requiring boldness and enterprise.

Unfortunately the effects produced on the health by abandoning the habit of smoking opium, after it has become deeply rooted, are even worse than the perseverance in it. A gloomy despondency is added to the usual symptoms of the ordinary stage of depression; a state ensues somewhat like a low state of delirium tremens, attended with extreme prostration of strength, and often with exhausting diarrhœa and vomiting; all pre-existing diseases are aggravated, dropsy frequently ensues, and death may soon result, most generally by effusion into the great cavities, and general anasarca. When these effects have begun to show themselves under a compulsory cessation of the habit, the most marked improvement of health is produced by resuming it. Hence no one who has once fairly given himself up to this unhappy vice will surrender it voluntarily. The result of the examination of several hundred opium-smokers on this point was, that, by their own confession, the extent of their indulgence was limited only by their means, and the spontaneous abandonment of it impossible. The writer of an essay on the opium

trade says,—" There is no slavery on earth to name with the bondage into which opium casts its victims; there is scarcely one known instance of escape from its toils, when once they have fairly enveloped a man." Mr Marsden also says it is almost impossible to shake off the habit. And Sir Stamford Raffles gives it as his opinion, " that the use of opium is all the more dangerous, because a person once addicted to it can never leave it off."

Nevertheless, under medical advice, with due caution on the part of the physician, and some exercise of resolution on the part of the patient, the habit may sometimes be effectually and safely broken. Its abandonment, either suddenly or without due precaution, is attended with danger. But that recovery is practicable and safe under a methodical treatment, the following case will sufficiently show :—A Malwah opium merchant and opium eater had often endeavoured to abandon the habit, but always in vain. On one occasion, when wrecked on the coast of Cochin-China, his strength of mind enabled him to observe his religious dietetic principles, so as to live for weeks on dry rice and water, because he could not cook food according to his creed. But when he wished to give up his opium, this man of iron nerve was like a child for feebleness of purpose; he could not encounter the sufferings of the stage of probation. At length, on arriving at Singapore, and learning that the habit could be broken by means of a wonderful medicine, he resolved to subject himself to treatment, but on condition that he was to undergo neither the rending of the bones nor gnawing at the stomach, which he experienced in all previous attempts. At this time he ate twenty grains of opium morning and evening. He was directed to use twice a-day a mixture containing a drachm of Battley's solution, a drachm of laudanum, and two drachms of tincture of gentian, and to wash down each dose with a mixture containing essence of ginger and two drachms of some aromatic stimulating tincture. He was likewise enjoined to take gentle walking exercise morning and evening. He felt no inconvenience, although his daily allowance was thus reduced at once from forty to about twenty-four grains ; on the contrary, he felt stronger and more comfortable. The quantity of the preparations of opium was then gradually reduced, while that of the bitter and aromatic tinctures was increased; and after the opium was thus all withdrawn, the tinctures were gradually exchanged for decoctions of black pepper, ginger, and quassia. In this way he recovered entirely without any suffering; and twelve months afterwards he continued scrupulously to abstain from the drug, and enjoyed the best of health.

From this and other parallel cases, there is no reason to doubt that the habit may be broken off with safety by a gradual progressive reduction of the dose of opium, and the substitution of strong bitters and hot aromatics for a time, especially if with this change be combined free air, regular and increasing exercise, and a good nutritive food. But it is impossible to give up the habit at once with safety.

The dissemination of this vice has been so fearfully rapid at Singapore, that the arrestment of it has become a sacred duty of the government. Unhappily, it yields a revenue of L.25,000 a-year. But this circumstance does not weaken the obligation to stop it, if practicable. Great difficulties will be encountered. But no attempt has yet been made; so that no one can pretend to say it is impossible. The available measures are the following :—The number of licensed opium shops ought to be diminished; the smoking of opium anywhere else interdicted; the admission of females into the shops prohibited. A society for the suppression of the vice should be instituted, especially including the respectable Chinese merchants; willing converts should be invited to register themselves as abstainers; and masters should be invited to refuse employment to all who do not join the registration. But no attempt must be made to exclude the drug altogether, or to diminish the consumption by raising its price; for all experience, in the East as well as in Europe, has shown that the only result of such measures in parallel circumstances, is to add the evils of smuggling to the sin of intemperance.

ARTICLE IV.—*Supplement to the preceding Paper on the Habitual Use of Opium, more especially the Mode of Cure.* By ROBERT CHRISTISON, M.D., Professor of Materia Medica in the University of Edinburgh.

ALTHOUGH intemperance in opium has notoriously become a somewhat prevalent vice, both among the working classes and in the wealthier ranks of society in this country, little has been added to our knowledge of its effects from home observation since the account given by me, in 1832, of the trial relative to the insurances of the late Earl of Mar, and the more general summary in the last edition of my book on poisons. The important paper, by Mr Little of Singapore, of which the preceding article is an abstract, appears to me well fitted in the meantime to supply the blank; and it has therefore been presented in this Journal, in an abridged form. The original, contained in a work of no easy access to most readers, is a very long and elaborate disquisition on many points which will interest the general public, and the frequenters of eastern parts, fully more than they will the professional public of Europe. Some entire topics, and many statistical illustrations, have therefore been here suppressed. But the unity and main objects of the treatise have never been lost sight of; and in no particular have the author's statements and views been altered or even modified.

The only portion of the paper left out in the abridgment, which some may think ought not to have been passed by, consists of a criticism of the observations I have made, and the opinions I am supposed to have held, upon the effects of the habitual use of opium

on health and longevity.   By a series of misconceptions, which are probably owing to want of access to original sources of information, Mr Little has been erroneously led to regard me as a proselyte to the doctrine, that the habitual use of opium does not undermine the constitution,—that, although it renders life miserable, it does not shorten existence. And, in arguing against these views, he has found fault with me, but not in stronger terms than I would have deserved, had my opinion been really what he supposes.   He says that, on the occasion of the jury trial alluded to above, I "was brought forward by the party who wished to prove that the habitual use of opium did not shorten life;" that, to the best of his belief, I " gave it as my opinion that, while the abuse of opium rendered life miserable, it did not shorten it;" that the cases collected by me and the late " Dr Tait, the police surgeon of Edinburgh, for the purpose of establishing their particular doctrine, are little adapted to do so;" and that, " moreover, many of these cases (were) picked to serve their purpose."   Now, it so happens that I was cited for the insurance company—not for the opposite party, as supposed by Mr Little; that, in my evidence, nothing was said about the vice making life miserable, but unequivocal testimony borne to its having a tendency to destroy health and abridge life; and that the cases succinctly quoted from my own experience and that of Dr Tait were not picked cases at all, but comprised every instance, without exception, that had come under our notice respectively.   It is true that a large proportion of these cases rather tended to prove, that many may reach a good old age, notwithstanding long abandonment to the vice of opium eating. But it appears to me that I had sufficiently guarded myself against misconception by the following passages :—

" These cases undoubtedly show that a certain number of opium-eaters may attain a good old age. But this circumstance will no more justify the conclusion that a fair proportion of them do so, than the parallel fact, that drunkards often attain old age, would bear out the conclusion that drunkenness is on the whole not inimical to longevity. The probability is, that many persons die at an early age of the effects of opium eating, whose habits are never heard of, simply from the circumstance that they die young, before their secret is detected. The cases now succinctly related, then, are given rather with the hope of inciting others, who have better opportunities, to make farther inquiries, than of conveying practically useful information ; and I fully anticipate the result, that this habit will be eventually found not less destructive than the vice of drinking spirits. I cannot bring myself to think, that the habitual use of a drug which produces such permanent narcotic effects as opium, disorders subsequently the digestive functions in so great a degree, leaves those who use it habitually in so miserable a state during the intervals of using it, as appears from their own confession, and leads obviously to emaciation, and a worn-out elderly appearance at an early period of life, can be consistent in general with the enjoyment of health, and the chance of an average prolongation of the term of human life."—" On the Effects of Opium-Eating on Health and Longevity : " Edin. Med. and Surg. Journal, 1832, vol. xxxvii., p. 133.

" These facts tend, on the whole, rather to show, that the practice of eating opium is not so injurious, and an opium eater's life not so uninsurable, as is commonly thought ; and that an insured person, who did not make known

this habit, could scarcely be considered guilty of concealment to the effect of voiding his insurance. But I am far from thinking—as several represent, who have quoted this work—that what has now been stated can with justice be held to establish such important inferences ; for there is an obvious reason why, in an inquiry of this kind, those instances chiefly should come under notice in which the constitution has escaped injury, cases fatal in early life being more apt to be lost sight of, or more likely to be concealed."—*Treatise on Poisons*, 4th edit., p. 721.

Founded upon data the most vague and unsatisfactory, an opinion had taken firm root among medical men that the habitual use of opium was a most deadly vice ; that it rendered a life, in assurance phrase, " more than doubly hazardous," or one in which double the usual premium would not cover the extra risk. The facts collected to illustrate that question, and not picked, but taken as they came, rather tended to show this to be an overstrained doctrine. I never held that they proved it to be so. Far less did I ever say or suppose that opium-eating, though it might render life miserable, did not shorten existence. On the contrary, in face of these facts, I believe that it does shorten life; and that in Europe we have hitherto arrived only at the favourable cases, for reasons adverted to in the passages quoted above.

But, at the same time, I cannot even yet allow, that there is any satisfactory evidence to prove the habit to be, in Europe, so very deadly to life as was universally thought till not many years ago. Even the observations of Mr Little, valuable as they must always be, on account of the graphic picture they present of eastern manners, and the fearful consequences to health, life, and morality, do by no means prove that the same results ensue to the same degree in Europe. In the first place, opium-smoking, and the eating of opium, or drinking of laudanum, are not necessarily the same thing. We do not yet know what it is that the smoker inhales. Does the morphia escape decomposition by the fire? If it does, how is it carried into the animal system, not being volatile ? With what is it combined in the smoke? These are questions which no one has ever dreamed of answering, yet they are possibly most material. But, supposing the two habits were quite identical in nature, the ultimate results may be influenced by the great difference in the objects for which the European and the Asiatic resort to it, and, consequently, in the manner and degree in which they severally practise it. At Singapore, the smoker goes openly, and without shame, into a place of public entertainment, and inhales the poison in such a way as to make a beast of himself as quickly as possible. In Europe, the opium-devotee sins in secret. His object is to make himself, not unfit, but fit, for society. By duly timing his doses, therefore, he avoids extreme depression. In one way or another he conceals the vice for years, or, as in an instance I was acquainted with, for an entire long life—from everybody but his druggist. It by no means follows, therefore, that the ultimate effects on health are the same in degree, or even in kind. Both habits can scarcely fail to be detrimental ; but, at any rate, it

stands to reason that the Asiatic practice must be the worse of the two.

Important, then, as the inquiries of Mr Little unquestionably are, they do not absolutely settle the question of the influence produced on health and longevity by the habitual use of opium, as indulged in by inhabitants of this country. The subject still requires more extended European observation.

I am sorry to add, after this introduction, that my opportunities of adding to existing information have not been so considerable as might be desired. But I have met with one case which would undoubtedly have proved fatal in early life, had not the habit been broken; and which, on that as well as on other grounds, well deserves to be made known; and, having had some little experience in the treatment of the habit with a view to its cure, I have thought the particulars may prove both useful to the profession and encouraging to the unhappy victims of the vice; more especially as my observation does not correspond with that of Mr Little, as to the great danger arising from its abandonment.

The first case was that of a seaman, of the age of twenty-eight, who had contracted the habit while in the mercantile service in the Eastern seas, in consequence of being obliged to use opium for a protracted dysentery. He had continued it for two years. His daily allowance was a drachm of solid opium, which he took in divided doses in the day-time. Immediately on his return from a voyage to the islands of the East Indian seas, he applied for admission into the Edinburgh Infirmary, to be cured of the habit. He had a sallow yellowish complexion; which, however, is well known to be occasioned by the climate merely of the parts he usually visited. Farther than this, nothing remarkable could be observed in him; and he assured me that he could follow his occupation well enough, but that it cost him a great effort to do so, and that his misery was great on awaking in the morning, until he commenced his doses. The bowels were little liable to constipation; but he had been long free of the remains of his dysentery; and he had not the affection of the eyes and nose, described by Mr Little to be generally observed among the smokers of opium at Singapore. His constitution being obviously little impaired as yet by the habit, I contented myself with simply withdrawing his allowance of opium at once and entirely, and with substituting a draught, with two drachms of tincture of hyoscyamus, in the evening, as a soporific. Great prostration of strength ensued; he either lay in bed motionless, or wandered about the ward with a languid gait and woe-begone countenance; he was affected with incessant loathing of food, nausea, and indescribable uneasiness in the stomach, but not with pain there, or in his limbs; and he slept none, notwithstanding the hyoscyamus. This state of matters continued for three days and nights, during which no change of treatment was made, except that a little brandy was given, to assuage the uneasy feeling in the stomach, and that an attempt was made, but

in vain, to obtain sleep by increasing the hyoscyamus to three drachms. On the fourth night he took no hyoscyamus; nature asserted her sway, and he slept soundly; in the morning he felt revived, took some food with relish, and had no uneasiness afterwards. From that moment he quickly recovered strength and spirits, under no other treatment than a generous diet; and, in the course of a fortnight after his admission, he left the hospital quite well. This instance may perhaps serve as an example of what may be expected when the habit, as seems often to happen under the counteracting effects of an active occupation, has not materially undermined the constitution.

Subsequently I was consulted in a very melancholy case, which, although its result is not known to me, is worthy of mention, on account of its remarkable circumstances. A medical gentleman in England had long been dissatisfied with his wife, on account of her neglect and indifference, so that at last a separation was contemplated. But he continued, from time to time, to put off the evil day. At last he was one evening hurriedly sent for home, to find her in a state of deep sopor, and in circumstances which left no doubt that a large dose of laudanum had been swallowed. By the application of the usual remedies, she was with some difficulty roused, and eventually recovered. To the consternation of her husband, however, he then for the first time discovered that she had been long in the habit of drinking laudanum to excess, and that on this occasion she had merely taken, by some accident, a more potent dose than usual. He came to Edinburgh to consult me what was to be done, as she expressed a willingness to be cured of her fearful habit; and more particularly he was anxious to know whether it might with safety be abandoned abruptly; because he despaired of accomplishing a gradual reform. The narration of the previous case determined him to adopt a similar treatment. I have never heard the result. Should these pages meet his eye, he may perhaps be induced to communicate it still.

Some years ago I had for a patient a gentleman, who had cured himself successfully of the habit, which he had contracted while engaged in a literary undertaking of some duration, and requiring protracted fatigue of the mind. I do not know the particulars, however; but he had recovered from the vice without danger; and, when I saw him, several years had elapsed without inconvenience or relapse.

The last case I have to mention is the most instructive that has yet occurred to me. An English gentleman, twenty-five years of age, whose pursuits rendered him somewhat migratory, consulted me, while in Edinburgh early in the spring of 1848, on account of ordinary stomach-complaints. The pulse being very frequent, his body emaciated, his complexion anæmic, and his expression of countenance haggard, I suspected something more than stomach-complaints in one of his age. My suspicions naturally turned to phthisis; and although they were not confirmed by a stethoscopic examination of the chest,

I advised him to repair at once to his friends in the south of England, whom he intended to visit in no long time at any rate, and there to put himself under medical advice. After this I heard no more of him till near the end of last August (1849), when I was requested by Dr Ebenezer Skae to see him here, on account of a return of his stomach-complaints, in a very urgent form. In the spring of that year they had assailed him with increased severity. During the summer they got progressively worse, though with occasional brief intermissions. Latterly chronic organic disease was suspected; and, after various remedies had been used without any permanent advantage, a gentle course of mercury was recommended by one of his physicians, and had been commenced before I saw him. I found him much emaciated, and extremely prostrate. He vomited most things he took; but for three weeks had taken scarcely any food. The pulse was frequent and feeble; the tongue whitish and clammy; the bowels rather confined; the skin cool; the urine scanty, natural in colour, not coagulable by heat or nitric acid. The abdomen was very lank; and in the epigastric and both hypochondric regions there was no fulness, firmness, tenderness, or dulness on percussion. The countenance was bloodless and sallow; the eyes clear, large, ring-eyed; the expression anxious and dreamy. There was no unusual secretion from the eyelids or nostrils. Suspecting organic disease, I recommended perseverance with mercury, and for the vomiting medicinal naphtha and hydrocyanic acid. In three days more, as he had become worse, I was sent for again; but, on my arrival, I was surprised to find him much more comfortable since the morning, and this without naphtha, hydrocyanic acid, or apparently any other remedy. Meanwhile, however, Dr Skae had learned that a suspicion was entertained that he took opium in excess. I therefore undertook to tell him that the symptoms resembled the after-effects of opium in those accustomed to use it, and that he must put his confidence, without any reserve, in his medical attendants. He seemed a little surprised at the announcement; but all he would admit was, that he did acquire the habit three years before, in consequence of using laudanum too heedlessly for toothach; and that, after nine months' indulgence, he had broken the habit, though with great difficulty, and with six weeks of constant suffering. This did not satisfy us, however; and, on finding out his druggist, and putting the question, it was discovered that for two years he had been supplied with large quantities of opium in various forms; that at one time his daily allowance was three ounces of laudanum; that latterly he had purchased at the rate of two drachms of hydrochlorate of morphia—that is, about two ounces of opium—every week; and that he had got that quantity only a few days before. The druggist having been bound down by him to secresy, it was necessary to extort a confession, if possible, from the patient, without making use of this information. But it was all in vain. He persevered in denying that he used any preparation of opium; and

nevertheless he had just contrived to obtain two additional drachms of hydrochlorate of morphia. He was now removed to airy lodgings, two miles out of town, and from any druggist's shop; and I then intimated to him our positive knowledge of his evil habit;—which, however, he began to deny again, until I stopped him abruptly with his druggist's admission. He then surrendered a paper of hydrochlorate of morphia, which he took from under his pillow; and gave his consent to any thing we chose to do for the purpose of ridding him of his enemy. We proposed to withdraw the morphia at once and entirely, to administer tincture or extract of Indian hemp at night only, and to allow him every four hours half a glass of brandy, diluted with water—a beverage to which, moreover, it appeared that he was not unaccustomed. At the same time he was placed under the vigilant observation of a sister, who had come from England to look after him.

The vomiting, which had previously ceased for some days, owing undoubtedly to the resumption of his doses, now recurred with increased severity. For three days and nights he had excessive retching and vomiting, and extreme muscular prostration; and on the third day frequent watery discharges from the bowels. But, from the first, the brandy relieved the irritability of the stomach for a time, and the Indian hemp was retained in the form of extract, though not in a draught. On the fourth morning the vomiting and retching ceased. But the diarrhœa continued; neither infusion of catechu nor gallic acid made any impression on it; on the sixth day there were ten watery evacuations; and therefore a little opium with acetate of lead was used in the way of injection. This had at once the desired effect. On the sixth day he was able to dress, and sit up for half an hour occasionally; which he had not done for two months. Next day he walked out for half a mile. The pulse had now fallen from 120 to 90; the tongue was moist, and tolerably clean; the appetite, which had begun to return as soon as he ceased to vomit, was good, and digestion undisturbed; he slept well; thirst was his only uneasiness, and his countenance, although still haggard, was nevertheless greatly improved in expression. Medicines were now abandoned. On the eleventh day, having still continued free alike of sickness and of diarrhœa, he set off for England, and made out the journey comfortably. Three months afterwards I heard that he went on favourably, gaining strength, and abstaining from opium, and also from stimulating liquors, except sparingly for medicinal purposes.

This case is probably a good illustration of the usual phenomena, when the constitution has been seriously undermined by the use of opium. It is not easy to imagine a worse case, short of the production of organic disease. The habit evidently could not have been continued much longer without imminent danger to life. Nevertheless it was broken off abruptly, without hazard. No one can answer

for such cures being permanent. An insane craving, as in the instance of the insane abuse of spirituous liquors, may lead to the habit being resumed. But, at any rate, it would appear from the instances given in this paper, that the habit may be easily broken ; and that there is no danger in suddenly breaking it, in so far, at least, as we see it in Europe. The knowledge of this fact may give to the physician in like circumstances a confidence and determination, which might otherwise be shaken by the symptoms of alarming exhaustion, but without which he can scarcely inspire his patient with the resolution necessary for encountering the trial which must be undergone. It is true that, in some instances, the opium may be withdrawn gradually, in the way recommended by Mr Little ; but I apprehend that, in general, as in the case of habitual excess in the use of spirituous liquors, patients may be found ready to submit to the physical evils of an abrupt abandonment of the opium, who will not undertake the moral trial of a gradual reduction.

ARTICLE V.—*Case of Poisoning with Sulphuric Acid ; with Remarks.* By JOHN WALKER, M.D., Inverness.

JAMES MUSGRAVE, aged 30, tailor, has always been healthy; is of spare habit of body and fair complexion. On the 29th March, at eight o'clock A.M., he swallowed 15½ drachms of sulphuric acid, S. G. 1·842. I first saw him half an hour after taking the poison. He was in bed, and exactly resembled a patient in the collapse stage of cholera, the extremities having the same livid appearance, and cold clammy feel—pulse gone. The inside of the lips, tongue, and fauces were swollen, having the appearance of being smeared with thin arrow-root. There was great difficulty of breathing ; the voice was husky. He lay doubled up almost in the shape of a ball, and was suffering from severe epigastric pain—moaning very deeply. Large quantities of carbonate of magnesia were mixed with milk, and drank freely, the first draught of which induced vomiting *for the first time,* three-quarters of an hour after swallowing the poison, of a dark grumous, bloody, and viscid matter, with the magnesia in a state of effervescence. The matters vomited became gradually brighter, and mixed with patches of tough mucus. The administration of the magnesia and milk was continued until the matters vomited no longer reddened litmus paper.

Second hour.—Epigastric pain increased ; skin less livid, and warmer; pulse can now be felt, small, feeble, and beating 30 in the minute ; feels drowsy, and requires to be shaken before he can answer questions. To have a table-spoonful of sweet oil every half hour, washed down with a solution of carbonate of soda ; the heat of the body to be kept up.

Third hour.—Pulse improves—45 ; surface warmer ; expression of terror nearly gone ; vomiting and epigastric pain as before. Continue the oil, and omit the soda.

Fifth hour.—Pulse 60 ; vomiting ceased ; feels more cheerful; epigastric pain continues. Freely cupped and leeched ; continue oil.

Eighth hour.—Pulse 100 ; skin hot; epigastric pain relieved. Apply a blister, and give oil every hour.

Twelfth hour.—Pulse 120, small and thready ; skin again cold and livid; has had no stool, and passed no urine ; bladder empty; pain greatly increased ;

has difficulty of swallowing, and croupy voice ; troublesome cough, with expectoration of tough, slimy, coffee-coloured mucus.

Sixteenth hour.—Sinking; epigastric pain very severe, so much so, that I was induced to try a weak solution of nitrate of silver, given in barley-water, which seemed to have the effect of allaying the pain for nearly two hours.

Twentieth hour.—Still sinking; has had a natural evacuation, slightly formed, and has passed about an ounce of pale straw-coloured urine, which had a very powerful effect on litmus paper. From this time the patient continued more restless, and died twenty-five hours after swallowing the poison, being able to answer questions sensibly to the last.

Appearances thirteen hours after death.—Epigastrium very much retracted ; intercostal spaces more than usually depressed ; features much shrunk.

Head.—Membranes of brain as nearly natural as possible; brain well-formed, very white, dry, and hard ; sinuses much congested ; considerable effusion at base, which not only reddened litmus paper, but caused the fingers to tingle ; ventricles empty and perfectly dry.

Gums as white as ivory ; inside of lips and cheeks much charred ; tongue contracted and wrinkled.

Fauces, larynx, and *trachea,* to within an inch of bifurcation, swollen and corrugated longitudinally, of a coffee colour, perfectly dry, and entirely deprived of mucous membrane ; epiglottis shrunk to one-half its natural size, and bleached.

Pharynx and *œsophagus* in same state as larynx and trachea, but darker, more swollen, and in some parts constricted.

Stomach contained about two ounces of grumous fluid ; mucous coat entirely gone ; and, with the exception of a few spots, the muscular coat destroyed, the whole surface charred, corrugated in large rugæ, and of a dark port-wine colour, here and there interspersed with a dark grey tint. The acid had effected greater destruction towards the pyloric end, close to the orifice of which three small circular perforations were found. The orifice itself was so swollen, constricted, and hard, as to admit little more than a common silver probe.

Duodenum black, serous coat alone remaining. There were also found in the first two inches of this part of the intestine, three circular perforations, similar to those found in the stomach. From this point the mucous coat of the intestine was only destroyed, and that membrane became less so, although very much congested, and here and there ulcerated and abraded, as far as the caput coli, at which point the intestine was uninjured. The whole of the gut was filled with a dark brown gelatinous fluid, which was so strongly acid as to smart the fingers. Liver, gall-bladder, spleen, and pancreas unaffected. Urinary bladder the size of a very small egg, perfectly bleached throughout, and as dry as parchment.

There was effusion into the *pleuræ,* to the extent of seven ounces, which reddened litmus paper, and smarted the fingers. The membrane itself dark and congested ; the lungs gorged with blood, and slightly emphysematous.

Heart.—Considerable fatty deposit, of long standing. Hypertrophy of left ventricle. All the cavities distended with dark clots of blood, which reddened litmus paper. The first two inches of ascending arch of aorta very much inflamed.

Analysis of Fluids.—After careful examination, the fluid at base of brain evinced the presence of sulphuric acid, but only in very small quantity, when tested in the usual manner with barytes.

Stomach.—No trace of the acid ; but in first part of duodenum a slight trace.

Blood.—The greatest amount of evidence of the presence of acid was found in the blood contained in the heart.

Remarks.—Musgrave purchased the acid, as he told the chemist, for the purpose of staining walking-sticks,—a process totally foreign

to the occupation of a tailor. He lodged in an attic. Next morning, about eight o'clock, the woman of the house was in the next room, and heard him utter a "loud scream." She rushed to his bed-room, and saw him replacing a teacup on the chair at his bedside. When I first visited him, there was not the slightest vestige of a stain on his outer lips, angles of mouth, cheeks, neck, or hands; nor was there any stain on his clothes, or bed-clothes, or around the bed;—proving that it is not at all necessary, as has always been stated, that, in order to avoid external marks while administering the poison to another, it must be done by means of a spoon or phial, pushed well back into the mouth. In this case the vessel was a common teacup, and the patient must have swallowed the poison while reclining on his elbow, and pitched or "chucked" it back, as an inveterate dram-drinker would do a glass of spirits. The acid was swallowed for the purpose of self-destruction, after two days of severe intoxication, and on an empty stomach,—circumstances which would allow the acid to act much more rapidly, and produce greater destruction. With Musgrave, and in two cases of poisoning with the same liquid which I attended some years ago, the vomiting was not "immediate;" and in neither of the three instances did vomiting take place at all until the evolution of carbonic acid gas from the presence of carbonate of magnesia caused such mechanical distension of the stomach as to induce expulsion of its contents. The non-vomiting in these cases is caused by the vital powers being paralysed from the quantity of strong acid acting on so large a surface, as we find in cases of poisoning from very large doses of tartar-emetic, where sometimes, in the absence of a stomach-pump, vomiting will not take place, without the administration of salt and mustard, or sulphate of zinc.

The duodenum seemed to suffer most from some portion of the concentrated acid escaping through the pyloric orifice, and thereby causing so much destruction of that passage as to prevent any of the magnesia or oil reaching that part of the intestine.

Ryland and Porter mention, that, " in suicide by the sulphuric and other mineral acids," the larynx generally escapes injury. In their view the epiglottis generally covers the upper part of the glottis, and thus the acid passes down the œsophagus without affecting the larynx. In this case, the acid was swallowed with great coolness and determination; but yet the instantaneous contact of so concentrated a mineral acid at once shrivelled up the epiglottis, and allowed some portion to escape down the larynx.

Taylor, in his work on poisons, asks,—" Can a person who has swallowed sulphuric acid exert the powers of volition and locomotion?" Musgrave moved freely; and, twenty hours after taking the poison, got out of bed, and sat upon the night-stool.

The same authority asks,—" Can the symptoms produced by this poison cease and re-appear?" As may be seen by my report, there was an abortive attempt at reaction, with cessation of vomiting and

relief of pain; but, at the same time, all the symptoms of enteritis were present.

As there was no congestion of the brain found after death, could the comatose state of the second hour arise from the action of the acid on the substance of the brain itself ?

Part Second.

REVIEWS.

Pathological Researches on Death from Suffocation and from Syncope; and on Vital and Post-Mortem Burning. By SAMUEL WRIGHT, M.D., &c. 4to. London, 1850.

THE investigations which we are about to notice were suggested by a remarkable trial for matricide, at which the author was summoned, on the part of the Crown, to give an opinion founded on the evidence of other surgeons, who had examined the body of the woman supposed to have been murdered.[1] That the medico-legal difficulties involved in the case were of no common nature, may be inferred from the fact, that a coroner's jury had held nine sittings without returning a verdict, and that it was thrice tried at the Shrewsbury Assizes before being finally disposed of by the acquittal of the party accused. The nature of the case is thus explained :—

" The internal appearances of any note were stated to be—marked congestion of the brain; excessive congestion of the lungs, which were unusually dark, and spumous wherever incised; and complete engorgement of the right cavities of the heart with black semi-coagulated blood. Externally, there were signs of burning, variously severe, over a considerable portion of the trunk, limbs, and face : in some places these were simply scorched brown ; in others, burnt to blackness ; but in no part whatever could the least trace of redness be detected. There was a small blister, containing what was suspected to be serum, on the inner side of the right leg, about four inches above the ankle ; but neither around nor beneath this blister was there the slightest mark of redness.

" The body was discovered lying in an out-house, a few yards from the kitchen door, and was supposed to have been dead some two or three hours. The burning had occurred in the kitchen.

" The medico-legal questions involved were—What was the cause of death ? and, Were the burns vital, or post-mortem ?

" It having been affirmed, that the deceased was in her usual good health three or four hours prior to the finding of her remains, I expressed my belief that she had died of suffocation, and that the burning was post-mortem."— Pp. 3, 4.

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[1] Trial of Mercy Catherine Newton, of Bridgnorth. See *Med. Times*, August 18, 1849, p. 147.

In his first chapter, Dr Wright enumerates the morbid appearances observed after death by suffocation : the turgid state of the vessels of the brain,—the dark congestion of the lungs, which pour out frothy blood when incised,—and finally, the complete engorgement of the right cavities of the heart, a condition which he believes to be the most constant and obvious of all.   Throughout the whole of this chapter (pp. 7-10) the personal experience and original experiments of the author are found to be perfectly in harmony with the statements of our highest medico-legal authorities.

He next proceeds to inquire, whether poisoning by the gaseous products of combustion leaves morbid appearances similar to those above described.   In experimenting on the poisonous effects of carburetted hydrogen, he uniformly found the following signs on dissection :—

"Joints flaccid; eye bright, and somewhat prominent; inner surface of skin and superficial muscles paler than natural ; large veins in the abdominal and thoracic regions full of bright-red blood ; all the cavities of the heart filled with blood of the same colour ; lungs slightly collapsed, and marked with red and whitish patches ; trachea and bronchi containing a little frothy mucus, and their membrane occasionally, but not frequently, streaked with vascular lines ; brain pinkish upon its surface, and its vessels moderately filled with florid blood.   In some cases the blood coagulated imperfectly ; in others, not at all."—Pp. 11, 12.

In dissections of fatal cases of poisoning by carbonic acid, although the appearances often bear some resemblance to those produced by suffocation, the similitude, according to Dr Wright, is neither actual nor even uniformly apparent :—

" The post-mortem aspect generally indicates that the brain has been the organ chiefly affected.   Its membranes are usually injected ; its vessels always turgid ; its substance studded with spots of blood wherever incised ; and not unfrequently there is extravasation upon its surface, or effusion within its ventricles or at its base.   Comparatively with the heart and lungs, the brain is most implicated in poisoning by carbonic acid; in suffocation the converse obtains.

" The *mechanical* act of respiration is perhaps not secondary to the process of oxygenation, in aiding the passage of blood through the lungs.   In suffocation this act is suspended, whilst in poisoning by carbonic acid it continues until death.   Hence, though in both cases the lungs are equally dark, in the former they are much more congested, and more spumous when incised, than in the latter.   For the same reason we usually find all the cavities of the heart moderately full of black fluid blood, after carbonic acid poisoning ; but after suffocation the right cavities *only* are *distended* with this fluid,—the left cavities are generally empty, or at most contain but little blood.

" The primary action of carbonic acid is doubtless upon the brain,[1] inducing a sort of artificial apoplexy ; but the poison has also that sedative property which enables it to destroy the powers of life much sooner than they could be destroyed by accumulating cerebral oppression.   *   *   *   *

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[1] " Carbonumque gravis vis, atque odor, insinuatur
    Quam facile in cerebrum."—*Lucretius de Rerum Natura*, lib. vi., l. 801, 2.

" I have myself seen one or two instances in which its sedative action was decidedly the chief physiological feature—all the cavities of the heart containing less blood than usual, and the lungs having a natural aspect.

" Though the results of my own experiments and observations lead me to the conclusion, that the indications are sufficiently obvious and precise to enable us, in the majority of cases, to distinguish between poisoning by carbonic acid and suffocation, yet knowing how certain acknowledged pathological conditions are liable to vary, I should assuredly let this fact restrain me from the expression of an absolute opinion on the subject in point, did it involve a question of criminal responsibility."—Pp. 12, 13.

The opinions of the author on all that relates to the physiological properties of the poisonous gases are entitled to great respect; for it was for an experimental inquiry into this subject that the Harveian prize was awarded to him in 1839. We fully agree with him, that the investigations hitherto made have not exhausted the subject, and that a medical witness, at a criminal trial, should venture an opinion on such points with extreme caution.

We pass over two chapters, in which the mode of death in cases of severe burns is discussed, and proceed to what we regard as the most important part of the work—that which treats of vital and post-mortem burning. When a burn has been inflicted upon the skin of a person in a state of health, more or less redness results, and may be detected beneath the blister or crust of the burn, or around its margin. The occurrence of this redness is not, according to Dr Wright, synonymous with inflammation; for in some instances the sufferers die too soon for the occurrence of inflammatory reaction; and in others, though life may be more prolonged, the patients do not rally sufficiently from the first shock for the opportunity of a definite inflammatory process. The precise nature of the redness, if it be not inflammatory or indicative of reaction, we are rather at a loss to define; and that it really is connected with inflammation or reaction is rendered probable by a consideration of some of the circumstances in which it is *not* observed. Thus Dr Wright has known the actual cautery freely applied on either side of the spine, in a case of palsy, without occasioning any redness either immediately or subsequently. He once had occasion to attempt to raise a blister rapidly by the application of boiling water, but the cuticle became whitened and detached, leaving the true skin destitute of colour. He has more than once rubbed the strong mineral acids over the abdomen of a cholera patient, and has used aq. ammoniæ and turpentine as rubefacients in one or two instances, without inducing warmth or redness. It seems just as perspicuous an explanation to assume, that in such circumstances the system is incapable of reaction, as that there is " a very depressed state of organic vitality." Besides, we find our author afterwards accounting for certain blisters produced on the application of stimuli shortly after death, by this same hypothetical organic vitality, yet beneath and around such vesications he never finds marks of redness like those which distinguish *vital* burns (p. 32).

Whatever explanation is accepted, the practical fact, as stated by Dr Wright, will hardly admit of question, "that a vital burn in a healthy subject occasions lines or patches of redness."

Can a blister be produced by applying heat to the surface of a dead body? In experiments made by Dr Christison, by pouring boiling water upon the body about ten minutes after death, the cuticle became "shrivelled and rumpled," but no blister was produced. In a fatal case of poisoning with opium, Dr C. found that a hot iron brought near the surface of the body four hours before death, and again half an hour after death, caused vesications in both instances, but the post-mortem blister contained air (p. 29). Taylor failed in producing blisters on bodies which had been dead for twenty-four hours. M. Leuret observed, that after death by anasarca the application of heat caused vesication; and Champouillon found that in such cases similar effects could be produced at almost any period after death. After noticing the results of these experiments, Dr Wright passes to his own experience on the subject. The most effectual and manageable means of producing a post-mortem blister, he finds to be the application of the flame of a spirit-lamp (p. 31). He has found—

"That the production of a post-mortem serous blister is no impossibility, yet, *cæteris paribus*, it is dependent entirely upon the amount of organic life remaining in the body admitted to be dead in the ordinary sense. Or it may be stated, in other words, to depend upon the nature of the death of the body experimented upon.

"If the process of dying shall have been protracted,[1] and the body cold before death, or marked by any of the other features of collapse, the raising of a post-mortem serous blister is altogether out of the question. I have tried the experiment in a number of instances, in some, ten minutes after death, but only a gaseous blister was produced.

"The separated skin, in these and similar cases, is of a brownish colour (of intensity varying with the degree and duration of the applied heat), and perfectly dry, crisp, and shrivelled; the subjacent skin has also a scorched appearance, is quite dry, and has a somewhat coriaceous feel. These conditions contrast, most strikingly, in every particular, with those which characterise a serous blister."—Pp. 31, 32.

The following is his description of the true serous blister, which he has succeeded in raising, in more than a dozen instances, on bodies recently dead, or on limbs just amputated.

"The detached skin is loose, and wrinkled, and sodden—being saturated with serum, and having very much the appearance of a woman's hand after continued work at the washing tub. This skin has a soft pulpy feel between the

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[1] "In some cases of more sudden death, as from hemorrhage, it is not possible to raise a serous blister. A stout athletic man, in good health, cut his throat frightfully, and bled to an enormous extent before he died. Fifteen minutes after death, I could not produce a serous blister in any part of his body, though it was still faintly warm. The exsanguined condition of the surface, however, sufficiently accounted for the fact. I have met with other cases corroborative of this."

fingers, which it moistens on pressure. The subjacent tissue is quite pale, and glistening with serum, which is sometimes in quantity only sufficient for lubrication, and again will amount to one or two drops in the space of a square inch."—P. 32.

He remarks, that these blisters cannot be raised on a body " organically dead; " and that their production indicates that a certain degree of organic vitality remains unextinguished when the stimulus is applied. He believes that, after death by suffocation, the conditions are especially favourable to the production of serous blisters, and, in illustration, adds :—

" The only really favourable opportunity I have had for producing, post-mortem, a serous blister, was in the person of a female, thirty years of age, who died suffocated from acute congestion of her lungs. She was slightly ana-sarcous, but this condition was so insignificant, that at a casual glance it was not recognisable.

" *Three hours and a-half after death,* when the body was quite warm, and the joints flexible, the flame of a spirit-lamp was applied to the lower and back part of the left leg, and to the lower and anterior part of the left thigh— in the latter place the anasarcous state was scarcely manifest. After the lapse of an hour blisters had arisen, filled with serum of a pale straw colour, and readily coagulable by heat. But neither around nor beneath these blisters was there the least shade of redness. The quantity of serum in the lower blister was upwards of three drachms ; that in the upper, rather more than two drachms.

" Trifling as was the anasarcous condition, I thought it desirable to know whether this had any share in the production of the blisters.[1]

" *Ten hours after death,* therefore, when the body had become cold and *rigid,* I again applied flame to it, and repeated the application at the end of *fifteen,* and of *twenty, hours.* In each instance only a gaseous blister was produced— the detached skin and subjacent surface having the appearance previously described, as peculiar to such vesications. It is obvious, then, that the first blisters were in no wise dependent upon the anasarca, which was a constant condition in the three last experiments, when warmth and all organic vitality were gone."—Pp. 33, 34.

Our author's experiments, then, seem to justify the following conclusions :—1st, That heat, if applied to the surface of a body before organic life is quite extinguished, may produce a serous blister. 2d, That such a blister differs from one produced on the living subject, in the absence of surrounding or subjacent redness. 3d, That blisters produced on a body which has become cold or rigid, or is passing into a state of decomposition, may be readily distinguished by the gaseous nature of their contents.

The abstract of Dr Wright's work, which we have endeavoured to give, will, we trust, induce such of our readers as are specially interested in this branch of medical jurisprudence, to consult the original for themselves. They will find the labours of other writers duly acknowledged and appreciated, while the author's own expe-

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[1] " I have several times, subsequently, tried the effects of flame upon bodies conspicuously anasarcous, after they had become cold and stiff, but in every instance the blisters were gaseous."

riments are clearly described, and illustrated by some excellent lithographic drawings. Altogether, the essay does Dr Wright great credit.

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A Treatise on Diseases of the Air-Passages, comprising an Inquiry into the History, Pathology, Causes, and Treatment of those Affections of the Throat called Bronchitis, Chronic Laryngitis, Clergymen's Sore Throat, &c. By HORACE GREEN, A.M., M.D., &c. Second Edition. New York. 1849. 8vo. Pp. 306.

THE first edition of Dr Green's work was published in 1846, and although the views he has put forth with regard to the nature of certain affections of the air-passages, as well as the practice he has recommended for their cure, have been known and adopted by several members of the profession in this country, we feel satisfied that they are not so generally understood and appreciated as their merits deserve. We propose, then, to condense, for the information of our readers, some of the contents of the volume before us, assuring them, that if they will only try, as we have done, the plan of treatment described by the author, they will soon find occasion to congratulate themselves on its success in appropriate cases.

In addition to the already well-known diseases of the air-passages, Dr Green treats of a peculiar alteration of the lining membrane of the pharynx, larynx, and trachea, which he denominates *follicular disease of the pharyngo-laryngeal membrane.* This disease has its seat in the numerous mucous follicles which are scattered over the fauces, pharynx, epiglottis, larynx, trachea, and even œsophagus. He considers them liable to inflammation, ulceration, hypertrophy, induration, and deposition of tubercular matter, and that most of these conditions are attended by a greatly increased and vitiated mucous secretion. Disease of the follicles may be primary and uncomplicated, and be limited entirely to the fauces and pharyngo-laryngeal membrane; or it may be complicated with hypertrophy and induration of the tonsils, and with elongation of the uvula. It may accompany, or be consecutive to, other affections of the air-passages, and co-exist with laryngitis, bronchitis, or with pulmonary phthisis. At the same time, the follicular disease should not be confounded with these, as it may exist whilst the intervening membrane is in some instances not only free from inflammation, but actually paler than natural. This, then, is considered to be the real disorder we have to treat in many of those affections hitherto called " bronchitis," " chronic laryngitis," " clergymen's sore throat," &c.

The follicular disease, in its simple and uncomplicated form, commences invariably in the mucous follicles of the fauces and pharynx, and is extended thence by continuity to the glandulæ of the epiglottis, larynx, and trachea, and, in some instances, to those of the

œsophageal membrane. Its commencement is so insidious, and its progress so gradual, that it may continue for months, and proceed to a considerable extent, before the attention of the individual is directed to it. He then, perhaps, becomes aware of an uneasy sensation in the upper part of the throat, accompanied by a frequent inclination to swallow, as if some obstacle in the passage might be removed by the act of deglutition; or more frequently there is an attempt made, and often repeated, to clear the throat by hawking, and to relieve it of a sensation of "something sticking at the top of the windpipe." At the same time, the quality of the voice is altered; there is hoarseness and loss of power, at first only perceived in the morning, or after a full meal, but afterwards increased towards evening, and after speaking or reading longer or louder than usual. The mucous secretion becomes viscid, opaque, and adherent, and is increased in quantity. Frequently there is slight soreness felt about the region of the larynx, but seldom cough. In this condition the symptoms may remain for a long period—sometimes for years; nearly disappearing at times, and then again becoming greatly aggravated by vicissitudes of temperature, increased exercise of the vocal organs, and by various other morbific causes.

If we inspect the throat and fauces during the progress of the above symptoms, we shall find the epithelium, which in the healthy state of the mucous tissue covers its surface, more or less destroyed; its absence being manifested by the slightly raw or granulated appearance which the membrane presents. The mucous follicles are hypertrophied, and appear distinctly visible, especially those studding the upper and posterior part of the pharyngeal membrane. If the disease be chronic, some of the follicles may be found indurated, or in some instances filled with a yellowish substance, having a resemblance to, and presenting the physical characters of, tuberculous matter; whilst striæ of opaque adhesive mucus, or of a muco-purulent secretion, may be seen hanging from the veil of the palate, or coating the posterior wall of the pharynx.

As the disease advances, and the follicles situated at the root of the epiglottis, those in front of the arytenoid cartilage, and the still more numerous glandulæ of the laryngeal mucous membrane, become involved in the morbid action, all the former symptoms become greatly aggravated. The hoarseness is much increased, and is constant; speaking or reading aloud is attended with great difficulty, and, when continued for any considerable time, is followed by pain and increased soreness in the region of the larynx, as well as by a sensation of fatigue, not only of the vocal organs, but of the system generally. In some cases, when the disease affects the glands, situated in the ventricles of the larynx, and near the vocal chords, the voice becomes completely extinguished; or if, by great effort, the patient endeavours to speak aloud, the vocal resonance is uneven, harsh, and discordant. At first there is seldom present

any decided or troublesome cough,—a circumstance which distinguishes the follicular disease from all other equally grave laryngeal affections. As the disease advances, however, and the glandulæ of the larynx and trachea become affected, a cough will steal on, which, from being slight, is at length severe, and in most cases is attended by a free tenacious expectoration. In this respect it differs from the dry cough of incipient phthisis.

Inspection of the throat, in this advanced period of the disease, generally exhibits a greater or less number of the diseased follicles in an ulcerated state. These ulcerations are generally first observed about the palatine arch, the posterior wall of the pharynx and along the border, and on the laryngeal face of the epiglottis. At the commencement these ulcers are small and superficial, appearing in the form of ash-coloured patches, surrounded by an inflamed and slightly elevated base. After a time, they destroy the mucous follicles, and sometimes involve, not only the mucous, but the sub-cellular, tissues in their progress. Not unfrequently there is, in addition, œdema and elongation of the uvula, and in many instances hypertrophy of the tonsils.

If the disease be not arrested until ulceration of the follicles of the larynx and trachea occurs, a manifest influence is exerted by this lesion on the nature of the cough, which becomes greatly aggravated, and is more or less paroxysmal. Should the structural change be extensive, it has a peculiar cracked or whistling character, and is attended by considerable soreness in the region of the os hyoides. The effects produced upon the intonation of the voice are likewise very apparent, but they differ according to the seat and extent of the disease. If the ulcerations are confined to the follicles about the tonsils, the veil of the palate, and the pharyngeal membrane, the quality of the voice is not ordinarily much changed, the sounds are merely obscured, or imperfectly articulated. But let the ulcerations extend below the epiglottis, and the hoarseness is greatly increased; the voice loses its power; and, should the mucous glands within the ventricles and around the vocal chords become involved, it is reduced to a state of complete aphonia, and a harsh whisper alone remains. Great difficulty of deglutition, with pains and sometimes dyspnœa, are symptoms which are ordinarily present when the epiglottis, and particularly when its superior border, is extensively ulcerated.

Dr Green tells us, that in a large proportion of the cases of follicular laryngitis, which have come under his care, where the affection has been long continued, he has found more or less ulceration in the crypts of the epiglottis. These erosions are frequently found occupying the edge or border of this fibro-cartilage; and they may often be seen distinctly by pressing down the base of the tongue with a broad crooked spatula. By the same movement, there may not unfrequently be discovered deep and ragged ulcerations burrowing in the fossæ, which are situated below the

lenticular papillæ, at the base or roots of the tongue, where the attachments between this organ and the epiglottis exist. Ulcerations occupying the latter position are productive of much mischief, and from their peculiar position are very likely to escape detection. Unless great pains are taken to draw the whole mass of the tongue downwards and forwards, their situation will not be observed.

The symptoms which characterise the presence of these lesions, do not differ essentially from those which indicate the existence of ulcers in the laryngeal cavity; they are, soreness on one or both sides of the throat, just under the cornua of the os hyoides ; hoarseness, often with more or less cough, and expectoration of an opaque secretion, which seems to come from the opening of the wind-pipe or very top of the throat. This expectoration is frequently increased after eating, and is sometimes tinged with blood ; or small masses of dark, almost coagulated blood, will be mingled with the sputum. According to Dr Green, the different aspects presented by the epiglottis are in some degree characteristic of the situation and extent of the ulcerations on its internal surface ; but his observations have not been sufficiently extensive to enable him to classify them with precision. But when the ulcerations exist along its border and on its laryngeal surface, the organ, which in its normal state is slightly crescentic, loses this form, and appears flattened like the tongue; it is, moreover, enlarged and thickened, and its border may be seen frequently serrated by the erosions. When that cluster of follicles which constitutes the epiglottic-gland, becomes the seat of ulceration, the epiglottis will assume nearly an erect form, and be found incurvated, or its crescentic shape considerably increased ; and when this lesion has extended to the numerous glandulæ of the ventricles, and to those around the chordæ vocales, the above alteration in the form of the epiglottis will be still greater ; its lateral edges will then be found rolled in towards each other, so that the organ will present nearly a tubular form, with its convexity towards the dorsum of the tongue.

Where follicular laryngitis exists with tubercular phthisis, the characteristic symptoms of consumption are generally greatly aggravated by the presence of the first disease, and the affection passes through its stages, and reaches a fatal termination, much earlier than when the latter only is present. Hence it is that in these cases, namely, where ulcerations of the larynx co-exist with pulmonary disease, the lives of patients may frequently be prolonged, and their sufferings greatly mitigated, by the employment of such topical remedies as will serve to allay the laryngeal irritation.

We pass over the chapters on the pathology and the causes of follicular disease in the air-passages, not because they are destitute of interesting topics for discussion, but from the circumstance that in these portions of the work the author has laid himself more open to criticism than in others. On this occasion, then, we consider we

are exercising a sound discretion in avoiding speculation, in order that we may occupy the space allotted to us by the more useful consideration of the means of cure which Dr Green has successfully employed in the treatment of various diseases of the air-passages, but more especially of the follicular diseases previously noticed.

The principal method of cure, then, consists in the application of a solution of the nitrate of silver directly to the diseased parts by means of a bent probang. Dr Green recommends that the crystals of the nitrate should be employed, and not the fused salt, as it is more likely to contain the nitrate of potash, of copper, or of lead in combination. A solution of the strength of from two to four scruples of the nitrate to an ounce of distilled water, is what he uses in ordinary cases; but when extensive ulcerations of the epiglottis or about the opening of the larynx exist, which it is desirable to arrest at once, he does not hesitate to apply directly to the diseased parts a solution of double the strength. Such application does not act on the mucous membrane, as has been supposed, by burning or by destruction of texture. It forms immediately with the albumen in the secretions of the mucous lining, a compound which defends the lining tissue from the action of the caustic, whilst it operates to produce a most favourable change in the vital actions of the part.

The instruments necessary for making direct applications of medicinal agents to the pharyngo-laryngeal membrane are, first a bent spatula for depressing and drawing forward the tongue, secondly a whalebone probang, to which is securely attached a small round piece of fine sponge. When it is desired to pass this instrument into the larynx, it should be about ten inches in length, and curved at the end. The curvature must be varied according to circumstances, for the opening of the glottis is situated much deeper in some throats than in others; but the curve suited to the greatest number of cases, is one which will form the arc of one quarter of a circle the diameter of which is four inches.

The instrument being prepared, the patient's mouth opened wide, and the tongue depressed, the sponge is dipped into the solution to be applied, and being carried over the top of the epiglottis, and on the laryngeal face of the cartilage, is suddenly pressed downwards and forwards, through the aperture of the glottis into the laryngeal cavity. A momentary spasm of the glottis follows, by which the fluid is discharged from the sponge, and is brought into immediate contact with the diseased surface. Occasionally the difficulty of breathing and the cough are increased for a short time by the application, and a varying amount of viscid ropy mucus is discharged. If the patient, on opening his mouth, take a full inspiration, and then be directed to breathe gently out at the moment in which the sponge is introduced, the irritation caused by the application will be much less than when this caution is not observed. Certainly it does not produce so much disturb-

ance as is caused by the accidental imbibition into the larynx of a few drops of tea, or even of pure water.

All larynges cannot be entered with the same facility. In some instances, where œdema of the epiglottis and of the arytenoid cartilages has existed, it is very difficult, in making the first attempt, to pass the sponge of the probang through the aperture of the glottis. Indeed, as a general rule, on no occasion should any attempt be made to enter the laryngeal cavity at once; the parts should be *educated* by applying the solution daily for several days to the fauces and pharyngeal region, to the epiglottis, and about the opening of the glottis. Proceeding in this manner, that exquisite sensibility which belongs to the lips of the glottis, is, in a great degree, overcome; and the instrument may then be passed into the larynx without producing half the amount of that irritation which its introduction even below the epiglottis would have awakened at first. The frequency of the application will vary according to the nature of the case. We observe that in some chronic cases it was had recourse to daily, but more generally every other day.

Such, then, is the nature of the local treatment recommended by Dr Green, in cases not only of the follicular disease of the air-passages he has described, but also in many of those disorders hitherto called chronic bronchitis and laryngitis, phthisis-laryngea, and croup. In this last disease, he tells us that it is exceedingly valuable, and that during the last eight years he has extensively employed it in cases of children, and in no single instance has ever observed any indications of the danger of suffocation. On the contrary, he has repeatedly observed that much less bronchial irritation is produced by the introduction of the nitrate of silver into the larynges of young children who are suffering from croup, than when it is introduced into those of adults who are affected by chronic laryngitis. In these cases, care should be taken that the sponge be not only firmly fixed to the rod of whalebone, but that it be not of a size too large to pass the aperture of the glottis. Anatomists are aware that there is but a very slight difference in size between the larynx of a child of two years and twelve years of age; and that at this period of life the calibre of the tube is from three-eighths to half an inch in diameter. Consequently, if the sponge be formed so as not to exceed one-third or one-half of an inch in diameter, it can be made, with slight pressure, to pass the aperture of the glottis, and to enter the laryngeal cavity. If any patches of false membrane are to be observed upon the pillars or tonsils, the sponge should be passed freely over these parts, and also upon the posterior wall of the pharynx. Not unfrequently, if topical measures are employed in the very outset of the disease, and before the exudative inflammation has extended much into the larynx, the affection may be arrested by one or two applications of the caustic solution to the fauces, and the opening of the glottis, without ever passing the instrument over the mucous surfaces of the larynx.

The above practice is the more valuable when we remember the mode in which croupal inflammation extends, as pointed out by Rokitanski and Hasse, namely, always from above downwards, and never in the opposite direction.

When diseases of the air-passages are complicated with permanent elongation of the uvula, or enlargement of the tonsils, the former must be amputated and the latter excised. Dr Green also, at the conclusion of his work, speaks of the constitutional treatment of these diseases, and of a recommendation he made some time ago, of sending phthisical cases to be cured in marshy districts, where ague is prevalent. On all these points, we do not think it necessary to enter. We have confined ourselves strictly to the leading points in the author's treatise, which are undoubtedly those that demand most attention in a practical point of view.

We stated at the commencement of this article, that we had ourselves tried the practice recommended by Dr Green. True, our experience has not been very great, but we have seen enough to satisfy us of its value. In the first place, by means of the bent spatula (which if broadened out anteriorly, and rendered slightly concave, will enable us to manage and depress the tongue with greater facility), we have obtained a far better view of the pharynx than we ever did before, and have in addition been able to examine the upper portion of the epiglottis, which previously we had never done. The follicular disease is easily recognised, and will be found to be exceedingly common, constituting the ordinary kinds of chronic sore throat, attended with dry cough, or occasional hawking up of tenacious mucus. The probang with the sponge dipped in the caustic solution, will be found by far the most convenient way of applying the nitrate of silver to the tonsils, fauces, and throat. With regard to passing the probang through the rima glottidis, we at first had some doubts of its possibility, conceiving that a piece of sponge the size of a gun bullet, saturated with fluid, would not pass through that narrow chink; but on trying the experiment in the dead larynx we found that it passed with the greatest ease. We have since passed it frequently in the living subject; at first, indeed, it is not easy, but with a little practice is soon accomplished. It is necessary, by depressing and drawing forward the tongue in the first instance, to obtain a good view of the epiglottis. Then, while the left hand keeps the tongue down by means of the spatula, with our right we introduce the sponge end of the probang, till it is immediately above or behind the epiglottis, carefully avoiding touching the posterior fauces, and then on making a sudden plunge downwards and forwards we are sensible of its passing the rima. Several cases under our care have been much benefited by this treatment, and we doubt not as our experience of the practice increases, that its advantages and useful applications will be rendered more apparent.

We need not say, after what has been written, that in our opinion

the profession are greatly indebted to Dr Horace Green for his treatise, which contains numerous cases illustrative of various pharyngeal and laryngeal diseases, and of their appropriate treatment. The style of the work is not elegant; its arrangement is confused, and there is much unnecessary repetition. Its pathological parts are in many instances faulty, and indicate an unacquaintance with the present state of science. Yet the author has the great merit of having described a new form of disease, of boldly introducing remedies within the laryngeal cavity, and of showing that his method of cure, judiciously applied, is simple, safe, and effectual.

A Practical Handbook of Medical Chemistry. By JOHN E. BOW-
  MAN, Fellow of the Chemical Society, and Demonstrator of
  Chemistry in King's College, London. 12mo. London, 1850.
  Pp. 259.
Manual of Chemistry. By GEORGE FOWNES, F.R.S. Third edition.
  London, 1850. Pp. 605.

Mr BOWMAN's little book, though essentially intended to be a manual for the use of students in a class of practical chemistry, is designed by him also as an assistance to practitioners who may wish to call in the aid of chemistry and the microscope in the exercise of their profession. In sufficiently small space, he manages to embrace all those matters which, in relation to practical medicine, are likely to become the subjects of chemical analysis ; and for the benefit of students, he introduces some which no practitioner will care to analyse, such as bone and pus. We have, of course, the urine, and its examination in health and disease, both qualitative and quantitative; calculi and concretions; blood, and the detection and quantitative determination of urea and other morbid matters in it ; milk, and its adulterations ; and lastly, a chapter on the detection of poisons. This last we think the least valuable part of the book. It may answer the purpose of directing the manipulations of students who are going through a course of tests for poisons in the laboratory, but we apprehend that it is hardly ample enough to serve as a guide to any unpractised person who may be required to examine a case of poisoning for judicial purposes.

Mr Bowman pretends to no originality, either in his processes of analysis, which are avowedly compiled from the best recent authors, or in his illustrations, which are mostly copies from well known works ; but he has the more valuable quality of being clear, succinct, and intelligible, on which account we feel confident that his Manual will find a place on the book-shelves of most students and practitioners.

When it reaches a second edition, which we have little doubt will be the case, we recommend him to get a new drawing of arsenious

acid for his chapter on poisons. What he has given us is, no doubt, a representation of the forms which arsenic assumes, but hardly of what it presents to the eye as it is got in a medico-legal analysis. He has drawn most of the crystals with their edges and points towards us, whereas it is always by one of the triangular facettes that they adhere to the surface on which they are sublimed, and it is this face which they present to the eye of the examiner. Let him make a sublimate by Reinsch's process in a thin tube, place it under a low magnifying power, and draw it as it stands, and he will then give a more faithful, though perhaps a less elegant, representation of what may be looked for when ocular inspection is employed to determine whether a product be arsenical or not.

We cordially recommend this little book to our readers.

The "Manual of Chemistry," by the late Mr Fownes, which has now reached a third edition, is a work well adapted to the wants of the student. It is an excellent exposition of the chief doctrines and facts of modern chemistry, originally intended as a guide to the lectures of the author, corrected by his own hand shortly before his death in 1849, and recently revised by Dr Bence Jones, who has made some additions to the chapters on animal chemistry. Although not intended to supersede the more extended treatises on chemistry, Professor Fownes' Manual may, we think, be often used as a work of reference, even by those advanced in the study, who may be desirous of refreshing their memory on some forgotten point. The size of the work (605 pages), and still more the condensed yet perspicuous style in which it is written, absolve it from the charges very properly urged against most Manuals termed *popular*, viz., of omitting details of indispensable importance, of avoiding technical difficulties, instead of explaining them, and of treating subjects of high scientific interest in an unscientific way.

Part Third.

CLINICAL REPORTS, LECTURES, ETC.

CLINICAL MEDICINE.—PROFESSOR CHRISTISON.

ON PARTIAL PARALYSIS.
March 5th 1850.

THE recent occurrence of several cases of Partial Paralysis in the wards, induces me to choose this occasion as a fitting one for some observations on an affection so frequent and so interesting in all its circumstances. As the system, now followed at this University, of examining you practically at the bedside of the patients, exempts me from the necessity of going into minute details of the cases in the lecture-room, your time will be better spent at present in listening to a connected account of the general topic, in which I shall introduce such illustrations as the cases you have seen will supply.

By Partial Paralysis is understood the loss of motion or sensation of a particular part or organ of the body. All cases which cannot be brought under the category of general palsy, paraplegia, or hemiplegia, are usually included under the head of partial paralysis. With this term you must take care not to confound, as some do, that of Incomplete paralysis; which means a state of paralysis, partial or general, characterised by sensation or motion being impaired merely, but not altogether lost. A partial paralysis may be thus either complete or incomplete. The loss of function may be total, or it may be more or less considerable, yet not entire.

Affections of this kind were little understood until a very recent date, scarcely, indeed, before the admirable investigations into the functions of the nervous system, laid before the Royal Society of London by my late colleague, Sir Charles Bell, between the years 1821 and 1835. Prior to his researches, the slightest symptom of paralysis was apt to be considered in practice to betoken a formed or approaching serious affection of the brain or spinal chord; whereas Sir Charles Bell has taught us, that many cases of partial paralysis depend on limited affections at the origin or in the course of special nerves,—affections which, however inconvenient in their result, may not involve any particular danger to life, and require very different treatment from that which was applied to them at an earlier period.

Partial paralysis may affect the extremities of the body, but it is more frequently met with in the head, especially in the face, and organs of the senses. It may also affect the sphincters, or the bladder, or portions of intestine, as in lead colic; but these internal palsies I do not propose to include in my present observations.

When its seat is in one of the extremities, we sometimes see it affecting the sensation or motion, and most generally the motion, of an entire extremity. Such cases are closely allied to hemiplegia or paraplegia, and usually end, sooner or later, in one or other of these diseases; or they arise out of them, the partial affection being left permanent after all other parts have been relieved of paralysis. But the most singular diseases of the present denomination, and belonging more peculiarly to the partial palsies, are those which affect the motions of particular joints, or particular motions of a joint.

Partial palsies of this kind occur most frequently as the consequence of acute febrile diseases, and especially continued fever. Some years ago, I was consulted in the case of a girl of eight years, who recovered about two years before that from a severe typhus, but with complete inability to extend the right leg upon the knee-joint. The *rectus femoris* and both *vasti* muscles were perfectly palsied and atrophied; and there was no other affection of the kind, and no disturbance of the general health. In this case remedies were of no avail. My predecessor, Dr Duncan, junior, after a tedious attack of fever, when about fifty years of age, was found, as convalescence arrived, to have lost in a great measure the use of both deltoid muscles. The movements of the joints were extremely circumscribed and feeble, and the muscles much wasted; but he had no affection of the kind in any other part. It was many months ere he recovered entirely, and ever afterwards, indeed, there was a certain ungainliness of movement at the shoulder-joints, and a difficulty in extending the arms right from the trunk. About the same time, I saw a young lady, who, about her twelfth year, nearly lost in similar circumstances all power over the movements of both ankle-joints. She had no other paralytic affection, and presented the usual good general health of youthful convalescents from fever. Her medical attendant, looking on the paralysis as connected with spinal disease, had prepared her relatives for the necessity of a constant horizontal position, and another medical adviser was disposed to take the same view. From previous experience, I entertained no such fears, and recommended a generous diet, the use of iron, and graduated exercise of the joints, increasing until she was able to sustain a course of calisthenic exercises; and under this treatment she got

quite well in the course of two or three months. One of your own number, who had a very dangerous attack of typhus in the beginning of winter, came out of it with a singular inability of the same kind. There was complete paralysis of motion and sensation in the left little finger, and the outer half of the adjoining ring-finger. The seat of disease was evidently where the ulnar nerve turns round the elbow; for here he had pain, much tenderness, and some fulness. Leeches and blisters relieved the pain, but not the paralysis, which still continues, and threatens to be permanent.[1] [We have likewise had in the male clinical ward an excellent illustration of the same disease in the case of the man Macartney. This, you will remember, was a case of most dangerous typhus,—as bad a case, indeed, as I ever saw recover. He got well in a manner rather unusual, but of which we have lately had three similar instances,—by gentle diaphoresis, continued from the eleventh till the fourteenth day ; and he was left for some time in a state of extreme languor and weakness. It was not till he had got so much better as to be able to be a good deal out of bed, that he himself called our attention to a great difficulty he had in bringing his left hand up to the side of his face and head ; when, upon examining the cause with attention, I was surprised to find that the biceps muscle is much atrophied, and its action extremely feeble,—which he says was not the case before he was seized with fever.]

The cause of these paralytic affections is in general very obscure. Sometimes, indeed, we can refer them more or less satisfactorily to mechanical injury in the course of the nerve which supplies the palsied part. [In the case of Macartney, we have thought the cause may have been long-continued pressure, in consequence of his generally lying during his fever upon the left side, with his arm under him ; an attitude to which I drew your attention at the time as being a very unusual one in such cases, and a favourable symptom in circumstances otherwise very desperate to all appearance.] In the instance of your fellow-student, the cause was with great reason supposed to be, that on one occasion, when in the height of his delirium he got the better of his female attendants and attempted to get into the street, the plan he fell upon to try to knock the door to pieces, was by standing with his back to it and beating it violently with his elbows. But in none of the other cases that I have met with, could any local cause, external or internal, be satisfactorily ascertained. [In the case of Dr Duncan, the inability was preceded by some neuralgia of both shoulders ; so that the disease was possibly the result of an affection of the muscles themselves,—a blight, the consequence of exposure of the shoulders in early convalescence. In the instance, again, of the young lady whose ankle-joints suffered, the fundamental cause may be with justice considered by many to be of the nature of spinal irritation or congestion, and the case not far removed from those forms of incomplete paraplegia which arise from the same cause somewhat later in life. But I have met with other examples, in which, as in the first I have mentioned, that of paralysis of the extensors of the right leg, no explanation whatever could be imagined that was at all satisfactory.]

The treatment is very simple. If there be a local cause, and it can be reached, appropriate remedies may of course be applied locally. In the other cases, we must rely on a general tonic regimen, and, if there be any power of motion left, graduated exercise, which at first ought not to be too vigorous. Stimulation by friction, sinapisms, or even blisters, may also be resorted to, especially if the motion be entirely lost. And in all circumstances galvanism may be properly tried. [This remedy has been attended with obvious good effects in the case of the man Macartney. In your fellow-student, and also in the case of paralysis of the extensors of the leg, it was of no use.]

But Partial Paralysis occurs much more frequently in the face and organs of sense than on the extremities of the body, and then presents itself with features

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[1] The passages within brackets have been added since, principally from a subsequent lecture.

of much greater variety and interest. It is sometimes met with as a solitary, and from first to last, independent affection. Sometimes, again, it is merely the prelude to a more general disorder of the same nature. Not unfrequently, it is the sequel of a more general paralysis, a partial affection of the face being left as a permanent affection, after a general paralysis, or a hemiplegia, has been cured in all other respects. In many instances the paralysis affects only the parts supplied by one particular nerve ; but often also it affects two or more nerves. Most generally one side only of the face suffers. It rarely happens that both sides are similarly affected. Yet sometimes we see this happen, especially in regard to the numerous facial muscles which are supplied by the *portio-dura* of the seventh nerve. Many years ago, I met with a case of double paralysis of this nerve in a convalescent from fever, when Queensberry-house was occupied as a fever hospital ; and I was lately consulted in a very remarkable case of the same kind, of which more presently.

The varieties of partial paralysis which may affect the face are limited only by the number of nerves of the head which supply special sense, common sensation, and muscular motion, to the several parts of the face, head, and mouth. Every cerebral nerve is liable to be disturbed in its function by organic disease, and one or two of them by functional disturbance.

The loss of the sense of smell is no uncommon occurrence ; and this has sometimes been traced after death to organic alterations in the olfactory or first pair of nerves.

[Of the effect of organic disease of the second or optic nerve in producing amaurosis, or loss of sight from destruction of proper sense in the retina, you have a very instructive example in the case of the patient, Mary Dryburgh. This is a married woman of 28, from Cupar, who three years ago had some affection of the head, attended with dimness of vision, from which, however, she recovered,—then convulsions during the delivery of her fifth child, ten months since,—and at length weakness of the eyesight not long afterwards, which gradually got worse, till four months and a-half ago she became totally blind. She did not mention to us any other complaint. But her limbs were observed to be very feeble. For some time, however, there was no distinct evidence that this was an incomplete paraplegia; for, having suckled her child for some months while poorly fed, she was consequently in a state of atrophy and great general debility at admission. On this account, and because she did not present any other symptom of cerebral disease, some little hope was entertained, notwithstanding the suspicious early history of her case, that the affection of the sight might depend on functional derangement only. The view thus taken was for a time confirmed by the result of her improvement in general strength. When under a generous diet, she became strong enough to be out of bed a little, it was remarked that the right pupil, which, together with the left one, had previously been much dilated, and quite immoveable under exposure to bright light, became more contracted and somewhat contractile. No further progress, however, was made afterwards ; galvanism, cautiously applied, effected no improvement ; it was even rendered probable, by means of this agent, that a cure was unattainable, because no flash was ever observed on completing or breaking the galvanic circle ; strychnia subsequently applied, first on a blistered surface over each eyebrow, and then internally, so as to occasion starting of the limbs, proved equally inefficacious ; and now it became apparent, as her general strength increased, that there was a well-marked, though still incomplete paraplegia. The amaurotic disease, therefore, is evidently part of a more general disorder, and the cause most probably organic and incurable. She has had a fair trial of treatment at any rate ; and accordingly she returns home in a few days, in better general health, but as destitute of sight as ever.]

The third cerebral nerve, or *motor oculi*, supplies the *levator palpebrœ*, as well as all the *recti* muscles of the eyeball, except the external one. Hence, when it is pressed or otherwise injured, there is inability to raise the eyelid, inability to

raise, depress, or turn inward the eyeball by voluntary power, while the involuntary movement of the eyeball upward, which takes place on shutting the eyelids, and which is accomplished by means of the superior oblique muscle, remains unimpaired, because that muscle is governed by a different nerve, namely, the fourth. The most remarkable symptoms of paralysis of the third nerve are dropping of the upper eyelid, so as to cover the greater part of the cornea, and squinting of the eye outwards. Some have also noticed dilatation and immobility of the pupil, which is supposed to be accounted for by the third nerve sending a twig to the lenticular ganglion, from which the iris is supplied. Immobility of the iris, however, is not a constant accompaniment of the other symptoms of paralysis of the third nerve. This nerve is not so liable to paralysis as some others. I have only met with one case of the kind, and that was many years ago.

The fourth, or pathetic nerve, has a longer course than any of those which proceed from the encephalon, and supply the head or face ; yet it seems little liable to injury—at least paralysis has not been observed to affect it specially. This circumstance, however, may depend on the symptoms being obscure. The fourth nerve supplies only the superior oblique muscle, by which the eyeball is rolled upwards and outwards involuntarily during the closing of the eyelids ; and the loss of function might be easily overlooked.

As the fifth nerve is a very compound one, so the effects of interrupting its functions are complex. It supplies common sensation to the forehead, face, eyes, nose, palate, gums, and throat ; likewise both the sense of taste, and common sensation to the tongue, and common sensation to the chin, teeth, gums, &c., of the lower jaw ; and finally also motion to the masseters, pterygoid, and temporal muscles, by which the process of mastication is carried on. The consequences of paralysis of this nerve, therefore, are flattening of the temporal and masseteric regions ; flaccidity in these quarters during the act of chewing ; loss of the sense of taste, and a feeling of numbness on one side of the tongue ; and loss of sensation of the whole of the same side of the face, temple, and forehead, including the nostril, and also the eye, so that the sclerotic and cornea are not sensible to mechanical irritants, and the nostril is not sensible to irritating fumes, such as the vapour of ammonia and chlorine. Another more special and singular consequence is inflammation of the sclerotic and cornea of the eye, generally ending in destruction of sight, arising from the eyeball having become insensible to dust and other irritating agents, which are consequently allowed to remain in contact with its delicate surface. Of course you will understand, that as the fifth nerve consists of three distinct branches from its outset, it may be that the injury affecting it does not extend to all, and, consequently, you may not have all the symptoms present which are here indicated. More especially the muscular branch may be separately affected, or the two sentient branches together. I have at present, from time to time, under observation a very remarkable illustration of this in the case of a lady, whom I first saw in 1848. Two years before that she was attacked with great numbness, but not complete loss of sensation, over the whole right side of the face and temple, great feebleness of muscular power in the same region, and, especially, complete inaction of the muscles which move the jaw on that side, together with some twisting of the mouth towards the left ; also numbness of the right side of the tongue, and a tendency to bite it ; lastly, squinting of the right eye inwards, and inability to turn it outwards. Here, you perceive, there was evidence of the sentient and muscular branches of the fifth nerve, the muscular branch of the seventh, and likewise the sixth nerve, which supplies the *abductor oculi*, having been all more or less affected. But when I saw her, the face was perfectly straight, the facial muscles acted regularly, the sensibility of the side of the face was in a great measure restored, and very little was left of the numbness of the tongue. But the masseteric and temporal spaces were remarkably hollow, and the muscles which usually occupy them did not swell at all during mastication ; and although she did not squint generally, yet when told to look towards the right side, the eyeball

could not be turned beyond the axis of the orbit.   Here it is plain that at first the whole of the fifth nerve, the sixth, and also the *portio dura* of the seventh, had all been more or less involved in some disease affecting their course somewhere before their exit from the skull; but that the fundamental disease was in the end so far removed, that all the nerves were disengaged, except the sixth, and the motor branch of the fifth.   I could give her no hope of relief from an affection of such long standing.   But nevertheless she has zealously tried various remedies, and among the rest both blistering and galvanism, without any success.

I have in the preceding narrative partly anticipated what I had to say of paralysis of the sixth nerve.   It supplies the *abductor oculi* alone.   Hence, when it is injured, the patient squints inwards; he cannot direct the pupil more outward than in the direction of the axis of the eyeball, and he sees double in some directions.   You have had a good instance of this affection remaining after a more extensive paralytic disease, in the case of Mary Weston, who has just left the hospital.   Three months before her admission in January last, she was seized with acute pain in the right orbit, extending down the cheek, and latterly towards the hindhead.   Two months after that, she gradually lost the use of the left arm and leg, but not altogether.   At admission, she had ceased to suffer pain, but had giddiness, buzzing in the ears, incomplete paralysis of the left arm and leg, and tendency to vomit.   She squinted inwards with the right eye, could not turn it outwards, and saw objects generally double.   She had also some numbness of the right cheek, and slight deflection of the tongue towards the right side.   Under the use of leeches, blisters, and purgatives at first, and afterwards of galvanism, she gradually recovered from every paralytic symptom, except the squint and double vision; and she was dismissed a few days ago in good general health.   In such cases, the double vision, a troublesome affection, wears off in general ere long.   The lady whose case I described last, had double vision at first, but is now free of it, unless when she looks very decidedly towards the right.   The change seems to be accomplished simply by the mind learning not to attend to the impression made on the retina of the deflected eye.

Of all the cerebral nerves none is so frequently affected with paralysis singly as the seventh.   This nerve, as you are all aware, has two distinct branches, or rather there are two distinct nerves which have wholly different functions, but are in close proximity during a part of their course.   One is the auditory nerve, and supplies special sense to the organs of hearing; the other, the facial nerve, or *portio dura*, supplies motion to most of the superficial muscles of the mouth, cheeks, nostrils, eyelids, eyebrows, ears, skull-cap, forehead, temples, and upper part of the sides and front of the neck.   When the auditory nerve is injured, deafness is produced of course; and there may be no other symptom of the nature of paralysis.   But the most singular phenomena are those which arise when the facial nerve is affected.   The whole side of the face becomes flaccid and pendulous, and the mouth is drawn to the opposite angle.   The patient cannot hold an object between the lips or cheek, nor whistle.   When he laughs or smiles, one angle of the mouth remains at rest, while the other is drawn towards the ear.   When he inspires forcibly, the nostril collapses; nor can he dilate it, like the other, by a voluntary effort.   The eyebrow droops, and cannot be elevated when the other is raised; and he is unable to close the eyelids, because the *orbicularis palpebrarum* can no longer contract.   As a consequence of the open state of the eyelid, which prevails even during sleep, the eye is apt to inflame.   But this is by no means so frequent an occurrence as Sir Charles Bell seems to have thought.   The most frequent affection is that of the *portio dura;* for it is liable to be injured, like other cerebral nerves, at its origin and course towards the bones of the head, by inflammation, extravasation, and tumours in the parts adjacent; it is also apt to suffer from disease in the temporal bone, which it perforates in passing out of the skull; then it emerges among glands, which, when inflamed or enlarged, are apt to press

upon it; and lastly, no other nerve seems so liable to suffer from what is called a blight, in consequence apparently of its wide expansion over the side of the face, head, and neck, and the great exposure of these parts to the action of cold. The auditory nerve is not very apt to be affected along with it. You have at present, however, under observation an interesting example of this complication in the case of Amelia Smith, in whom the disease was clearly produced by external violence. In the middle of December last she was thrown down by a drunk man, and struck the right side of her head against the edge of a step. After lying for some time insensible, she gradually recovered consciousness, and then found that the right side of the face was completely paralysed, which affection has continued ever since. When admitted into the clinical ward a week ago, more than two months after the accident, she presented all the symptoms of facial paralysis which have just been enumerated. But there were also signs of injury to other nerves. She was totally deaf in the right ear, so that the auditory nerve was involved. There was tenderness over all the paralysed side of the face, and frontal headach on that side, so that the fifth nerve had not entirely escaped. Her speech was sluggish, and somewhat inarticulate, giving reason to suppose that the ninth, or glosso-pharyngeal branch of the eighth, might also be in some measure implicated; and there was also a sluggishness of perception, intractable disposition, and feebleness of purpose, together with much bodily weakness, emaciation, languor, frequency of pulse, and dry brownness of the tongue, which all combined to render it probable that she laboured under a more general head affection still. Under the use of blisters, and occasional laxatives, she has hitherto made little progress; and, on the whole, I presume the case will end in fatal disease of the brain. I have resolved, however, to give her the chance of relief from mercurial action; and calomel has, therefore, been prescribed thrice a-day, with a little opium. [Soon after this she rallied appreciably, but before the action of mercury was excited. She became more alert, more lively, and a little stronger —the tenderness of the face wore off, and the speech improved—and the hearing of the right ear began decidedly to return. The facial paralysis, however, continued without diminution, and her disposition became more intractable, so that she would not take her medicines after repeated promises to do so; and at last she left the hospital. I need not say that the issue continues very doubtful, though more promising than at first, and that the little chance she had of recovery is likely to be annihilated by the want of comforts and due attention at home.] It is remarkable that sometimes the *portio dura* is paralysed on both sides at the same time. This is a rare occurrence; but I saw a case of it some years ago in the fever hospital; and I was consulted a few months ago in an extraordinary case, in which both the *portio dura* and *portio mollis* were completely paralysed on both sides. The first occurred to me when I had charge of Queensberry-house at the time it was a fever hospital. A healthy young man, well advanced in convalescence from a severe typhus, awoke one morning with loss of power over the whole face, which he first noticed on finding that he could not hold anything with his lips. He had complete immobility of features, and, on both sides of the face, all the other paralytic symptoms I have already mentioned; but his hearing was perfect, and there was no other paralytic affection, and no disturbance whatever of the general health. No cause could be discovered—no treatment was of any avail. Leeches, blisters, brisk purgatives, mercurial action, and galvanism, proved equally unserviceable. The other case was that of a mercantile gentleman, about thirty years of age, whom I saw first about this time last year, and again three months ago. Thirteen months before I saw him, he had a very bad attack of general paralysis, supervening gradually on prolonged mental anxiety in business. When at the height, the disease was characterised by extreme, but not complete, paralytic weakness of the limbs, arms, and face, shooting pains in every part, but no other affection of common sensation, slight deafness, great derangement of all the functions, and much

prostration. From this apparently desperate state he slowly recovered during the summer and autumn, and in September he could walk tolerably well. But he then became on a sudden totally deaf, and the facial muscles were at the same time paralysed on both sides. After that he went on improving in health and strength; but the affection of the seventh pair of nerves remained without alteration. When I first saw him, there was a slight paraplegic uncertainty in starting to walk, and a somewhat caricatured strut afterwards. But nine months later his gait had become quite natural. There is now total deafness, and total immobility of features, so that he speaks without expression, laughs without a smile, and cannot shut his eyes, which, however, are not liable to inflammation. He has no other affection whatsoever. He speaks fluently, articulately, and with a varying, correct intonation. Mastication is perfect. Sensation all over the face is perfect. He walks long distances with a firm step and at a quick pace. His intelligence is untouched, and he discharges with acuteness an important branch of an extensive commercial house in London. I have never, indeed, met with so remarkable an instance of so important a partial paralysis, attended with such perfect entireness of body and mind in every other respect. He was most anxious, of course, to be cured of his deafness; but all feasible remedies had been fully tried, except galvanism; nor could I hold out any great encouragement to try this also. When tried, it not only effected no relief, but likewise, being unattended with any sound during the transmission of the galvanic current, it indicated, according to the experience of electricians, that the case was hopeless. In this case, there must have been, in the first instance, rather extensive disease at the base of the brain, probably in the membranes; but the cause of the subsequent supervention of paralysis of both divisions of the seventh nerve, on both sides of the head, is obscure.

The eighth nerve is a complex one in its origin and distribution, and not less so are the consequences of injury to its structure. Arising by many roots from the side of the *medulla oblongata* and the commencement of the spinal chord, it supplies, by means of its glosso-pharyngeal branch, some of the muscles of the pharynx and base of the tongue; and by its pneumogastric branch, the larynx, pharynx, and gullet, the lungs, the heart, and the stomach; while its spinal-accessary branch is partly distributed along with the last, and partly supplies two of the larger muscles of the neck, the *sterno-mastoideus* and *trapezius*. The consequences of injury to this nerve or any of its branches are therefore very serious. An important injury, indeed, of the pneumo-gastric nerve involves the speedy destruction of life; for the functions of the larynx, lungs, and heart, are immediately interfered with. But the diseases of the encephalon which lead to injury of the eighth nerve, are sometimes preceded by more limited mischief, confined at first to the glosso-pharyngeal branch; and then there exists a true partial palsy, consisting of difficult deglutition and articulation on account of paralysis of some of the muscles of the tongue and pharynx. This effect however is not complete unless the ninth nerve is involved also.

The ninth, or hypoglossal nerve, supplies all the muscles of the tongue which are not supplied by the glosso-pharyngeal. Its origin is at no great distance from the origin of that nerve. Hence they are frequently involved together in the same disease. When this happens, articulation becomes sluggish and indistinct, the tongue cannot be protruded, and deglutition is difficult. It is not easy to isolate the affections of the two nerves. But when articulation and protrusion of the tongue are principally affected, the hypoglossal nerve is probably the chief seat of injury; and when difficulty of deglutition is the prominent symptom, the mischief probably resides rather in the glosso-pharyngeal nerve.

All paralytic affections of the tongue and pharynx must be regarded with great suspicion, however slight they may be; for they generally indicate disease at a part of the encephalon, where a great variety of nerves, important to

life, are at no great distance, and closely grouped together. They are not very common. But by a singular concurrence, I had no less than three cases of the kind under observation at one time about eighteen months ago, and one of them was peculiarly interesting, both for the variety of its phenomena, and because the symptoms were all beautifully explained by an inspection of the head after death. This was the case of a man, James Paterson, who was a clinical patient here in midsummer of 1848. He was a mason, about 57, and of intemperate habits. Four months before admission, he had a thickness of speech from want of power over the tongue, soon afterwards intense headach confined to the left side of the head, and ere long much giddiness. Other correlative symptoms were superadded ; and at admission he presented the following remarkable complications :—The muscles supplied by the left facial nerve were completely paralysed, with all the usual consequent phenomena, and among the rest, incapability of closing the left eyelid, and vascular injection of the conjunctiva. When told to put out the tongue, he protruded it very much towards the left side, and his articulation was indistinct, though not slow. The hypo-glossal or ninth nerve was obviously affected as well as the facial nerve. But there was no difficulty in swallowing, nor in chewing ; the sensation of the affected side was everywhere entire, and vision was unimpaired ; neither was there any paralytic weakness of the limbs. I was led to draw an unfavourable prognosis not merely on account of the proximity of the injured nerves to others of more importance, but likewise because he had violent unintermitting headach in the left side of the head, a frequent sharp pulse, and a failing appetite, which rendered it probable that the fundamental disease of the encephalon was not a circumscribed one, confined to a limited part of the surface, but a more general disorder affecting its substance. He was several times freely cupped and briskly purged, leeches and blisters were then repeatedly applied, cold applications to the head were also used, and in a few days the use of calomel was begun, with the view of speedily exciting mercurial action. Under these measures, a deceitful improvement took place at first. The headach abated, the speech became less indistinct, and the mouth was less drawn to the right side. But in a few days more the articulation became worse again, he began to swallow with difficulty, his debility increased, the countenance seemed oppressed, the pulse increased in frequency but diminished in strength, the appetite quickly failed, and, although he was always quite sensible, his mind was evidently feeble. Mercurial action now set in for the first time, but without any amelioration of the symptoms. When he had been a month in the hospital, he could scarcely swallow at all or put out his tongue, and his articulation was unintelligible. The pulse was extremely feeble and rapid, and he took no food. In a week more he was suddenly attacked with general tremor and subsultus ; insensibility then for the first time supervened, and in a few hours he expired. On dissection, there was found a large abcess in the left side of the cerebellum, with much surrounding softening of the cerebral parenchyma, and broken-down tubercular matter mixed with the pus. Firm lymph was copiously effused over the medulla oblongata and the origin of the seventh, eighth, and ninth nerves, but especially over the ninth and glosso-pharyngeal root of the eighth on the left side. I need not point out to you how well these appearances accounted for the whole progress and phenomena of the case. The tubercular nature of the fundamental disease in the cerebellum was illustrated by the discovery of numerous tubercles studding both pleuræ, and of old tubercular infiltration of both lungs, with a nearly dry cavity in the lower right one. At the very time this case occurred, I saw, along with Mr J. T. Alexander, the last of a similar case, in which I had been repeatedly consulted during the preceding eighteen months. This was a gentleman of seventy, but well preserved for his time of life, a lawyer, and somewhat of a bon-vivant. In January 1847 he began to speak in a sluggish mumbling manner, but had no other illness except occasional dyspepsia, from over-feeding his superannuated frame. There was an extraordinary descent of the velum

and uvula, and difficulty in elevating them ; for which astringents of the most powerful kind were used to no purpose. In the course of the ensuing summer his articulation became scarcely intelligible ; but he put out his tongue well, swallowed easily, chewed vigorously, moved his lips freely, had no defect of sensation anywhere, walked vigorously for his years, digested his food well when he did not take too much of it, and was as clear in his intellect as ever. Repeated blisters to the neck, a blister-issue, and afterwards galvanism, were successively tried, but without avail. Remedies to improve his digestion made him more comfortable, but did not mend his speech. As winter advanced, he became unable to do more than utter a humming sound. On the approach of spring, deglutition for the first time was difficult, and he could no longer protrude his tongue. He was also more prone to suffer from his unconquerable habit of indulgence at table, and his strength began to fail, but not his mind. In mid-summer (1848), after transacting business with some activity, he was seized one morning with vomiting, feverishness, and great debility ; and in a few hours he seemed about to die, the pulse being 150 and fluttering, the breathing laborious, the expression hippocratic, and his consciousness very imperfect. To our great surprise, he made a temporary rally for some days, after his bowels were relieved by medicine of an enormous accumulation of fetid fæces. The pulse fell to 80, he could take some food, though with great effort in swallowing, and he even sat up a little now and then. Repeatedly, however, he had fits of extreme languor, and a rapid fluttering pulse ; his prostration gradually increased ; and he died in the middle of July, ten days after the man Paterson,—continuing sensible till within a short period of his death, and presenting no symptom of paralysis, except of the tongue and pharynx. An examination would have been most interesting ; but it was declined by the relatives. While attending these two patients, I also saw a third case of the same nature, in circumstances somewhat different. A gentleman of seventy called on me for examination, on account of a proposal of assurance to an Assurance Company, of which I was medical adviser. He was said to enjoy perfect health, to walk vigorously, and to have no imperfection except a hesitation of speech, of twelve months' standing. He certainly looked amazingly well ; but he had a slow mumbling articulation, as if his tongue was loose in his mouth ; this affection had been on the increase, though tardily ; and on observing him as he left my house, I saw that, although he managed to shuffle along the lobby well enough, he required the aid of all the force of two friends in order to get into his carriage. He was obviously paraplegic. I had, of course, no hesitation in advising that his proposal should be declined. He is, indeed, still alive,—I know not in what state,—nearly eighteen months since I saw him ; but this does not alter the nature of the case, which was one of paralysis of the hypoglossal nerve, in connection, to all appearance, with a slow, but dangerous general affection of the base of the encephalon or its membranes.

Having presented you with the preceding sketch of the principal varieties of partial paralysis of the face and organs of sense, with illustrations from your own present opportunities in the wards of the hospital, as well as my previous experience, I shall now conclude with a few general remarks on the pathological causes, the prognosis, and the treatment of cases of the kind.

Of the pathological causes of partial paralysis, the first to be mentioned is organic disease in the encephalon at or near the origin of the nerve or nerves supplying the affected part ; and in different instances, inflammation and softening, tubercle and induration, or extravasations have been observed. In such cases, the partial palsy usually arises as the remains of a more general affection of the same kind, or passes into it. The next is thickening of the membranes at the base of the encephalon, the result of chronic inflammation. This seems the most frequent cause of paralysis of the fifth, eighth, and ninth nerves. Disease or injury of the nerve itself, between its origin and entrance into the bones of the skull, is not so common a cause as might perhaps be expected.

The olfactory and optic nerves present the appearance of disease more frequently than other nerves.   Softening is met with, but more frequently atrophy.   At the same time, a question may arise in the latter case, whether the wasting has preceded or followed the loss of function.   Disease in the bones of the skull is a fourth cause, and is more frequent in the instance of deafness and facial palsy, than of other varieties of local paralysis.   A fifth is tumefaction of parts adjoining the nerves after their passage through the skull.   This is a common cause of facial paralysis, and sometimes it may be detected by manual examination.   Another well-known case of the same nature is suffocation in paroxysms, from an enlarged aorta or subclavian artery pressing on the recurrent nerve which supplies the proper muscles of the larynx.   The most singular of all causes is the action of cold on the part supplied by the affected nerve, constituting the affection called, in ordinary speech, a blight.   The fifth and seventh nerves are supposed to be peculiarly apt to suffer in this way ; as, for example, from the action of a strong cold wind, attended perhaps with sleet, on one side of the face in travelling on the outside of a coach.   I have several times met with facial paralysis which arose in this way.   One cannot well see why facial numbness should not arise often in the same manner ; but I have never met with such a case.   A temporary loss of sensation, going off on the cheek recovering heat, is a familiar occurrence ; but a similar affection, so lasting as to merit the name of disease, seems very rare.   Lastly, functional disease in the alimentary canal has been supposed to occasion some cases of amaurosis or paralysis of the optic nerve.   It does not appear, however, that other nerves are apt to be affected by the same cause.

The prognosis must depend greatly on the pathological cause.   This cannot always be discovered ; or rather, in endeavouring to trace it, we can seldom go beyond a strong conjecture.   The prognosis bears reference to two distinct risks, —the chance of the disease being permanent, and the chance of danger to life.   As to the first point, we can never be too cautious in promising recovery.   The only case in which we may speak with some confidence, is that of facial palsy when clearly produced by cold.   In regard to all others, a prognosis ought not to be hazarded before the trial of remedies.   A slight improvement is generally the forerunner of complete recovery.   Duration is always an unfavourable circumstance.   As to the second article of prognosis, the risk to life, the least dangerous is pure facial palsy ; and there is scarcely any danger if it can be traced either to cold or ordinary tumours, not themselves dangerous, situated externally to the skull.   Pure paralysis of the optic nerve, or olfactory nerve, or of one only of the nerves supplying the muscles of the eyeball, is also often unattended with danger, simply because a very limited disease may be sufficient to interrupt the function of the nerve.   The most dangerous partial palsies are facial numbness depending on injury of the fifth nerve, and above all, paralysis of speech and deglutition, which arises from injury of the hypoglossal and glosso-pharyngeal nerves ; because these nerves are adjacent to others of great importance to life, and experience has shown that they are seldom affected without more serious mischief eventually showing itself.   It is unnecessary to add that, whatever may be the nerve affected, the danger is always greatest when there are signs of general cerebral disturbance.   Accordingly, however limited the paralysis may be, it must be regarded with suspicion, if there be frequent headach, giddiness, or tinnitus, frequency of the pulse, disturbance of the mind, or signs of a general inroad upon the constitution, not referable to some other obvious cause.

The treatment of these singular diseases is well understood.   Let us take for example facial paralysis, the most common of them all.   When this affection may be distinctly referred to cold acting on the side of the face, there is no better remedy than a blister applied once or oftener to the cheek.   When it depends on glandular enlargements, or other tumours, near where the facial nerve emerges from the skull, the same remedy is often very serviceable ; or leeches may be resorted to in the first instance, if there be evidence of a some-

what active inflammation. [Very lately, I attended with Dr Duncan a gentle-
man in whom complete facial paralysis of the right side occurred rather sud-
denly during chronic inflammation and enlargement of the cervical glands near
the root of the jaw.   One blister over the upper part of the neck, relieved the
affection, and a second, three days afterwards, removed it entirely.]   One or
two brisk purgatives are sometimes useful; and when the functions of the
stomach and bowels are disturbed, attention must be paid to this, and the
general health improved by bitters, alterative doses of mercury, iodide of potas-
sium, gentle aperients, exercise, and country air.   When blisters fail, the treat-
ment which most generally succeeds is the excitement of mercurial action.
This is a remedy which it has been the custom to employ empirically in almost
all partial palsies of the face and organs of sense.   We can easily understand its
action, on considering that inflammation or chronic thickening of textures
adjoining the nerves may be the cause of the palsy ; and it succeeds often
enough to justify its retention in practice.   I have seen two cases of facial para-
lysis, and one of paralysis of the *abductor oculi*, get well under the use of mer-
cury, after local remedies had failed; and the first signs of amendment com-
menced in all of them with the signs of the approach of mercurialism.   In old
cases direct stimulants of the nervous system have been recommended, such as
galvanism and strychnia.   I have often tried them, but, so far as I recollect,
not with success in any instance.

LECTURE INTRODUCTORY TO A COURSE OF MILITARY SURGERY.

DELIVERED IN THE UNIVERSITY OF EDINBURGH, 1ST MAY 1850,

BY SIR GEORGE BALLINGALL.

GENTLEMEN,—It would be, in all respects, more agreeable to me to find myself at
the conclusion, instead of the commencement, of my college duties, at this period
of the year; but I have of late suffered so much from bronchitic attacks, that I
was quite unable to encounter the cold of an Edinburgh winter, and was glad
to seek shelter in the west of England.   This, you will easily understand, has
not given me the same opportunity of acquiring information in my own special
department, which I enjoyed during a former absence, when I took occasion to
visit the military hospitals and medical schools of the great continental states
of Prussia, of Austria, of France, and of Belgium, our own military and naval
hospitals at Malta, and the interesting establishment for the instruction of
young surgeons at the military hospital of Grand Cairo in Egypt.
     I have not, however, been altogether idle, but have been engaged in an
extended inquiry into the state of hospitals generally, have once more visited
all those in London, and have taken occasion to make myself acquainted
with the localities and construction of the principal hospitals in Somerset
and Devonshire, particularly those of Bath, Bristol, Taunton, Exeter, Barn-
staple, and Plymouth.   At the last-mentioned place, I had the pleasure of
visiting the great naval hospital—one of the government hospitals which I had
long desired to see—and found it in the most perfect order, under the superin-
tendence of Dr Rae, of the Navy—an old friend, whose acquaintance I first
formed at Madras, upwards of forty years ago.   By his kindness, and that of
one of his assistants, Mr M'Donald, I am enabled to present to you this view
of the institution over which he presides—an institution worthy of the naval
character of the country, and to which (along with other views and plans of
hospitals) I shall take an early opportunity of directing your attention, having
always looked upon the site, the construction, the ventilation, and the interior
economy of hospitals, as one of the most important of all topics to an army
surgeon.
     At present I proceed, without further preface, to lay before you, as I have

hitherto done, some of those peculiarities which characterise military surgery as a separate branch of study, and to offer you a few historical notices of the progress of the art itself, and of those who have been distinguished amongst its practitioners. Exceptions have been taken to the term *military surgery*, as if it was desired to imply by it something different in principle, as well as in practice, from common surgery. Now, although I do not think it unnatural that the art and its professors should have taken their designation from that branch of it which, upon great and momentous occasions, constitutes its most distinctive feature, yet I wish to observe, once for all, that I employ this term as embracing military and naval medicine and surgery in the most extended sense of the words—as embracing not only the more strictly surgical accidents and diseases occurring amongst soldiers and seamen, but also the treatment of those internal diseases which are prevalent on foreign service, and in our numerous colonial possessions,—in short, all that in either branch of the service contributes to the prevention as well as to the cure of disease ; for it cannot be too often repeated that it is by prevention, rather than by cure, that the efficiency of our fleets and armies is to be maintained.

All arts, trades, and professions, expose those who practise them to peculiar diseases, and of these, as affecting the part of the population employed in civil life, we have several interesting and valuable accounts. It will be easily understood that, while many of the exercises and habits of soldiers are undoubtedly of an invigorating and salutary description, there is no class of men exposed to more numerous or more fertile causes of disease in the frequent, sudden, and unexpected changes of climate to which they are subjected—in the urgent and unseasonable calls of duty, which they must not disobey—in the privation of food, of shelter, and of every comfort, to which they must occasionally submit ; and in the thoughtless excesses of every kind in which they are but too prone to indulge. If to the study of all these causes and their irresistible effects on the human frame, we add the considerations of those complicated wounds which it is their peculiar lot to receive, we shall find abundant occupation for all the talent which the most active and assiduous professional man can bring to bear upon the subject of military medicine and surgery.

In adverting to the origin of this department of medicine, it is to be regretted that we possess little or no detailed information regarding the provision made for the treatment of the sick and wounded in ancient times. That medicine was occasionally distributed in the Macedonian armies, is to be inferred from the historical fact of Alexander having once been exposed to the murmurs of his soldiery, in consequence of its omission. " *Vulneratorum magnam haberi curam æquum est*," was a maxim fully adopted by the states of Greece and Rome ; but this seems rather to have applied to those permanent provisions now given to disabled soldiers in the shape of pensions, than to any professional means of treatment in the recent state of wounds, or in the acute stages of disease. The first traces of field hospitals, or, as they are sometimes termed, flying hospitals, are perhaps to be found in the armies of the East, where certain followers, termed *deputati*, were distributed amongst the cavalry to carry off those wounded in battle. For this purpose they had on the left side of the saddle two stirrups, in order that they might more easily take up the wounded behind them, and for every person thus saved they obtained a certain reward.

Field hospitals were probably established in Germany before the middle of the 14th century ; at least we have frequent mention of field surgeons in the writings of that period ; and Fronsperger, speaking of the establishment of a corps of artillery, says there should be with each company a particular field surgeon—not, however, a paltry beard-scraper (bartscherer), but a regularly instructed, experienced, and well-practised man. The extraordinary alliance here alluded to between shaving and surgery, which has always been so unpalatable to the profession, would appear to have been fostered, or rather

insisted on, by some governments, even up to the beginning of the present century. So late as 1801, certain Englishmen, who had entered the Swedish navy as assistant-surgeons, were dismissed the service, for refusing to shave the crews of their respective ships.

Spain, which has in recent times been so frequently the scene of conflict between hostile armies, would seem also to have been one of the first countries in which the wounded soldier found a comfortable home. In the Chronicle of the Conquest of Grenada, we are told that, in 1484, a large force was assembled, many of them the very flower of Spanish chivalry. Numerous surgeons accompanied it, who were to attend upon all the sick and wounded, without charge, being paid for their services by the Queen, Isabella, who, in her considerate humanity, provided six spacious tents, furnished with beds and all things necessary, for the wounded and infirm. This was denominated the "Queen's Hospital," and has been vaunted as the first introduction of a regular camp hospital.

In France, field hospitals were first established, under the illustrious " Henri Quatre," at the seige of Ameins, in 1579, and the benevolence of the institution was so gratefully acknowledged by the soldiers, that they distinguished the campaign, in which they were established, by the name of the *velvet campaign*. Humanity to the wounded seems, even long prior to this period, to have been a trait conspicuous in the character of the French monarchs, St Louis himself, the ninth king of that name, having personally assisted in the cure of the soldiers whose wounds were the consequence of the wars undertaken for the purpose of expelling the infidels from the Holy Land, or of his contests with our Henry the Third.

In the British army we have been less distinguished by the early adoption of field equipments than by the perfection and efficiency to which our regimental hospitals have been brought. In this respect we have excelled all other nations ; and it will be my duty, in subsequent lectures, to direct your attention to the economy and management of these establishments.

After this hasty sketch of the provisions for the sick and wounded soldier, I would now turn your attention to the sources of instruction laid open to those who are qualifying themselves for the public service of the state. The application of the principles of medicine and surgery to the preservation of large bodies of men during warlike operations has not at all periods of history obtained from those in authority that degree of attention to which it is entitled. Even the most warlike nations in Europe did not, till a very recent date, make any regular provision for superintending the health and treating the wounds and injuries of the troops. Soldiers and seamen were too often left to all the contingent hardships of war, without any adequate means of resisting the approach of disease, or treating it successfully in its earlier stages.

This was connected with the character of warlike operations during the early history of modern Europe, in which a campaign was for the most part of a few weeks' duration ; and, after some violent and sanguinary struggle, the victorious and conquered party generally retired for the rest of the season to their respective homes. Thus in the long and sanguinary conflicts, during the 14th and 15th centuries, between England and France, the business of a campaign consisted in one, or at most two, great and extraordinary efforts between the contending powers. This activity and dispatch in military operations were required, not only by the insufficiency of the pecuniary means for fitting out and maintaining armaments in a foreign country, but also by the chance of sickness appearing, and thinning their numbers to an incredible degree. We know, from various creditable authorities, that if the battle of Agincourt, fought on the 23d October 1415, had been postponed but a single week, the English army would, in all probability, have been so much diminished by sickness and mortality as to have fallen an easy prey to the predatory attacks of the Norman peasantry. Though Henry V. had embarked at Southampton, on the 18th and 19th of August, with 50,000 men, and landed at Havre on the

21st, before five weeks had elapsed dysentery had attacked them so severely and extensively, that 2000 men are reported to have died of it in a single day, and not above a fourth part of the whole force was capable of bearing arms.

While little was done for alleviating the personal suffering of the soldier in the recent stages of disease, still less was done for the instruction or guidance of those who might be called upon to administer professionally to his wants. The first country in Europe in which medical knowledge appears to have been employed methodically to the benefit of armies was Austria. Placed with Hungary and the adjacent territories at the eastern boundary of Europe, the Austrian empire was almost incessantly at war with the Turks, and finding it necessary to maintain a line of fortresses, or strong posts, on its eastern frontier, numerous reinforcements were constantly called for. Hungary is, however, in many respects, one of the most unhealthy countries of Europe. Traversed by a thousand streams, pouring their tributary offerings into the slow rolling Danube, its surface is extremely moist, and the solar heat, operating on this surface during the day, is followed by dense dews and fogs during the night; hence miasmatic diseases prevail with a force and virulence unknown in other countries. The agues, remittents, and dysenteries of Hungary appear first to have made an extraordinary impression in 1566, or, according to another authority, in 1572, when the Emperor Maximilian the Second led a numerous force to the banks of the Danube. Having encamped on a low humid island in the river, his troops very quickly sickened, and the majority were destroyed in a few weeks.

From this period the frequent occurrence of sickness and mortality amongst the Austrian troops rendered it indispensable for the government to provide a suitable medical staff, and to devote particular attention to those diseases incident to a military life. Accordingly we find that the first authors who devoted express treatises to the subject of military medicine were Austrian physicians, of whom we have a numerous list between the year 1664 and 1735; and the first person who appears to have undertaken the composition of anything like a complete treatise or manual of military medicine was "Raymond Mindererus," a physician of Augsburg, who had spent his earlier years in the Austrian army, and who is in some measure known to the profession by the prescription still occasionally bearing his name. In Austria is to be seen at the present day the Josephinum of Vienna, the most splendid institution in the world for the special instruction of army surgeons,—" Schola Medico-Chirurgica militum morbis et vulneribus curandis sanandisque instituta."

In the capital of Prussia again we have a kindred institution, that of Frederick William the Second, at Berlin, destined by its royal founder " in the first place, to receive the surgical staff of the field hospitals which had acquired experience in the war with France, and to preserve it to the country ; and, in the next place, to provide for the field hospitals in future a supply of well educated surgeons."

In France, various ordinances were issued between 1718 and 1747, containing some dispositions favourable to the instruction of the young army surgeons, and at the peace of 1763 Richard submitted to the Duc de Choiseul, the minister at war, the propriety of requiring the army surgeons to give a regular account of their practice; and from that time forward, particularly since the termination of the war with this country in 1815, the publication of the records of the military hospitals in France has gone on with a most commendable spirit and regularity, while we have in that country an admirable provision for the education of their army surgeons in the Hôpitaux d'Instruction, established at Paris, at Strasbourg, at Metz, and at Lille. To France we are also indebted for some of the earliest systematic works in the department of military medicine, particularly those of Colombier, one of their most distinguished physicians, who, in 1778, gave to the public a general and valuable " Treatise on the Health of Soldiers," in seven volumes octavo.

With reference to our own position, I may observe, that, while in other countries the whole profession may be said to be occupied in one train of inquiry, the army and navy surgeons of Great Britain have special fields of experience, observation, and research, open to no other body of professional inquirers. How fully the profession has availed itself of these opportunities may be seen by a single glance at the list, which I have appended to my text-book, of works on the "Diseases and Accidents of Soldiers and Seamen," published exclusively by medical officers in the service of her Majesty, or of the Honourable East India Company. But, while the *profession* has done much, the *state* has done little. While this country possesses (in the extent and variety of her colonial possessions) facilities for the improvement of military and naval medicine beyond any other—aye! beyond all others put together,—we have nothing to be compared to those splendid establishments on the continent to which I have just referred, and which I have recently visited. Even the means of instruction afforded by the museums at Chatham, at Haslar, and at Plymouth, are more the result of professional energy than of government patronage, and, situated in provincial towns, they are but little available to the great bulk of the profession. In the Metropolitan School of Dublin a course of lectures on military surgery has been delivered for three years past, by Mr Tuffnell. But this is a matter of individual enterprise ; and I blush to think that I still stand alone as the only professor of military surgery in this country endowed by the government, while there are so many others qualified, by their talents, information, and experience, to be advantageously employed in making known to the rising generation of army and navy surgeons the peculiarities of those duties which they will be called upon to discharge.

While the few standard authorities (of foreign countries) to which I have already referred in the medical branch of the subject, are comparatively of recent date, "military surgery," properly so called, has long ago acquired a more tangible and instructive shape. We find that the Italian surgeons, who were the first to distinguish themselves in the successful pursuit of anatomical science, were amongst the first to produce express works on the treatment of wounds and injuries received in battle, from the warlike weapons of the 13th century ; but the invention of gunpowder, and its employment in battle, produced such essential changes in the features of war, and in the character of the wounds presented to the army surgeons, that it seems to me quite superfluous to dwell upon the imperfect traces of our art, as practised by the heroes of antiquity, or noticed in the writings of historians.

It is not very wonderful that the novelty and mortality consequent upon gunshot wounds should have led surgeons, as well as soldiers, to indulge in the opinion of their poisonous character, which was very generally entertained until overthrown by Ambrose Paré, a man who united to all the knowledge of his time, a singular degree of originality and talent, which enabled him to deviate widely from the line of his predecessors and contemporaries, to discard many of the foolish superstitions and crude practices then in use, and thus to simplify and improve greatly the treatment of wounds. The circumstance of his being attached to the army in one of the most warlike periods of the history of France, and of his being surgeon to four, if not five, successive sovereigns, gave him a field of practical experience in military surgery which none of the Italian surgeons had yet enjoyed, and which, since that time, has scarcely fallen to the lot of any individual.

[Here the lecturer introduced a historical sketch of the writings of the more distinguished military surgeons of England, as already published in his "Outlines," and proceeded to notice the labours of his friend, Mr Guthrie, as follows.]

Mr Guthrie's "Treatise on Gunshot Wounds" was first published in 1815,

and in subsequent editions has been greatly enlarged and improved, embracing observations on " Inflammation, Erysipelas, and Mortification," on " Injuries of Nerves," and on " Wounds of the Extremities, requiring Amputation." Here the author enters into the consideration of gunshot wounds in general, and illustrates his doctrines by a reference to the events of the Peninsular war, and to the most extensive experience, which perhaps any of his countrymen have ever enjoyed. To Mr Guthrie the profession has subsequently been indebted for several important surgical works ; and the young surgeons of the army are particularly indebted to him for his Clinical Lectures, in which he has power-fully advocated their interests, and given a vivid picture of the realities of the service. In a series of " Lectures on Wounds and Injuries of the Chest and Abdomen," which have been published in one of the journals, and of which Mr Guthrie has put me in possession in a separate form, we find him with all the energy of his younger days advocating the cause of the wounded soldier, lamenting the insufficient numbers of the medical staff in the recent conflicts in India, as well as upon former occasions, and remonstrating with the autho-rities on the subject. He concludes this remonstrance with an apology, which, I believe, no one but himself will think at all necessary. " I have been asked," says he, " why I presume to obtrude my opinions on any one, much more on the great civil authorities of this country, who do not desire them ? The an-swer is simple. There is no one who *ought* to understand the subject so well, although there are many, perhaps, who do understand it better. It has been inquired what place I am seeking to obtain ? The answer is more simple still. I am a man without a wish—without desire—for anything which belongs to this world ; I seek a place, in which I and all the authorities I have ventured to address, shall one day stand before Him, by whose all-seeing eye our inmost thoughts will be laid bare ; and where I earnestly pray that my endeavours on behalf of the helpless may be favourably judged."

Such are a few, and only a few, of the most conspicuous names in the pro-vince of what may be more strictly termed military surgery ; but were I to stop my enumeration here, I should lead you to form a very imperfect and erroneous opinion of the nature of the service,—of the duties which devolve on a military medical officer,—and of the merits of many who have performed these duties with honour and success. The carnage even in the great battle of Waterloo,—an event sufficiently unique and distinguished to mark the age we live in,—is in no long time equalled by the mortality amongst those brave men who are employed in defending our foreign possessions ; and it would be un-pardonable to omit mentioning numerous authors who have written well upon the diseases to which our troops are exposed in distant and unhealthy climates. I have yet said nothing of the writers on the diseases which afflict the soldier in camp and in garrison ; in this list the venerable names of Pringle, Brock-lesby, Monro, and Cleghorn stand particularly conspicuous. Amongst writers on the diseases more peculiarly incident to seamen, Lind, Blane, Trotter, and Burnett hold the most distinguished place ; and from a numerous catalogue of writers on tropical diseases, I would particularly recommend the works of Hunter, Jackson, Bancroft, Chisholm, Curtis, Johnson, Annesly, Martin, Twining, and Geddes. Into anything like even the most brief analysis of these writings, your time forbids me to enter, and it is perhaps less necessary, in-asmuch as they are more generally known to the profession, and, I believe, more frequently referred to in other classes, than those which I have pre-viously noticed.

With reference to the course upon which I am now about to enter, I have already hinted, that it is not without reluctance that I am compelled to trans-fer it to the summer session. By lecturing every day, instead of three times a week, I shall be enabled to deliver the usual number of lectures, and in this respect the course will not be shorn of its due proportions. To young men burdened, I may say overloaded, with compulsory study during the winter months, the change may in some degree be a matter of convenience ; but to me

it makes this very essential difference, that I cannot expect the same amount of attendance from gentlemen in the army, the navy, and the Honourable East India Company's service, with which I have generally been honoured. From such gentlemen, coming home from the most remote parts of the world, I have been constantly favoured with numerous and recent communications on the health of our soldiers and seamen, enabling me, I trust, from year to year, to make these lectures more instructive to my hearers; but many of my old pupils and professional friends, while they return from foreign climes with enlarged experience, return also, I am grieved to think, with impaired health, and must seek to renovate this by relaxation from study, travelling, and other enjoyments, to be obtained only during the summer season.

From letters which I have hung up for your inspection, from my colleague, Mr Syme, the President of the College of Surgeons, from Sir James M'Grigor, Sir William Burnett, and from Doctor Scott, the examining physician of the East India Company, you will observe that this summer course will obtain from the several bodies or departments over which these gentlemen preside, the same recognition which my winter course has heretofore enjoyed.

While I have upon many occasions deplored the tardiness of the government in instituting a class of military surgery in the metropolis of this great empire, and leaving its establishment in the sister isle to the unaided zeal and energy of a talented young surgeon, formerly in the army, I have had no cause to complain of want of patronage or encouragement from the heads of the medical departments of the army and navy. They have done all that, under existing circumstances, they can do to recommend the study of military medicine to young men preparing for the public service, and in this they have been well supported by the periodical journals, both military and medical. Within the last few months a series of well-written and emphatic articles have appeared in the " Lancet," urging the institution of a class of military surgery in London, and pointing at the possibility of doing this even without the assistance of the government. This last is the only point on which I differ from the writer of the articles to which I allude. While so much is done to instruct our military and naval officers in the scientific destruction of their foes, I do not see why more should not be done to instruct our medical officers in the preservation of their friends ; and I do not see why, even in these economical times, the public should not extend to London and to Dublin the same moderate endowment which has been given to the chair in this University. I have elsewhere observed, that " this were a cheap compliment,—this were a very becoming attention to the health of that army and navy which have served the nation so faithfully and so efficiently,—which have preserved the country from foreign invasion,—which have protected its commerce in perilous times,—and which have opened up vast empires to the spirit and enterprise of the British merchant."

From what I have now said, you will, I think, readily understand the views and feelings with which I enter on the duties of the ensuing session ; and in endeavouring to carry these views into effect, I proceed, under the impression that the department allotted to me in this great medical school, is a department of all others the most purely practical; and although I cannot but feel that a long and distant seclusion, in my earlier days, from the schools of medicine, and the seats of modern science, deprived me, in the first instance, of many advantages enjoyed by others, I am nevertheless encouraged by the hope, that many of the best years of my life, passed in an intimate acquaintance with sick and wounded soldiers, in the study of their habits, and in the treatment of their diseases, may enable me to lay before you some practical information on those subjects with which young men, destined for the public service, are more particularly called upon to make themselves acquainted. I will now, therefore, briefly advert to the arrangement which I think it expedient to follow, and to the topics which I think it incumbent on me to discuss. The course consists of *three* great divisions. In the *first* of which, as already hinted, will fall to be

considered the selection and examination of recruits for the army,—the diet, clothing, and exercise of the troops,—their accommodation in camp and in quarters,—the diseases to which they are more particularly subject in these respective situations,—and the means of prevention ; next, the situation, construction, and economy of military hospitals ; and lastly, the means of transporting the sick and wounded. These are topics of which it will be difficult for young men, inexperienced in the service, duly to appreciate the importance; but the numerous authors to whom I shall have occasion to refer, in illustration of my views, will afford the best possible proof of the value in which they have always been held by the most able and most practised of our military and naval surgeons. In reference to these topics, and to the safety and success of armies, it has been observed, " that in the progress of time and events, there is not a single man upon whom a call may not be made for the exertion of faculties and acquisitions of great variety and extent, and on whose knowledge there may not depend the lives of hundreds of thousands, the expenditure of millions, and, finally, the security or downfall of the state to which he belongs." There is, perhaps, no individual in an army to whom these reflections more forcibly apply than to the head of the medical department ; and it is consolatory to think, that even in seasons the most inclement—under privations the most severe—in climes the most ungenial—and encampments the most unwholesome —the resources of our art have been successfully opposed to the disasters of war.

In entering upon the *second*, or surgical, division of the course, I introduce it with a few observations on inflammation, which are followed by the consideration of burns, ulcers, and hospital gangrene. To this will succeed the consideration of wounds in all their forms and bearings, of all the various complications with which they are attended, and of the several operations which become necessary in their treatment.

In the *third* and concluding division of the course, will fall to be considered the geographical distribution of diseases, the diseases incident to soldiers and seamen in long voyages, on foreign stations, and particularly in tropical climates. A knowledge of these subjects is obviously connected with the nearest and dearest concerns of the state, and with the successful pursuit of those great interests which particularly distinguish this sea-girt isle. Here I find a field of observation so extensive, that although, as a young man, I entered upon it without hesitation, I have long felt myself unable to do justice to the valuable observations of my successors ; but I would fain hope that my personal experience may at least enable me to point your attention to what is most important.

With reference to the means of illustrating my views, I must notice the obligation under which I and my class have in later years been laid by the Senatus Academicus, in procuring for the instruction of the students of military surgery (and of the medical students generally), the valuable collection of preparations made by Mr Rutherford Alcock during the recent campaign of the British Legion of Spain. This is a collection containing many interesting specimens, illustrative of the injuries done by fire-arms, and to which I shall have frequent occasion to refer in the progress of the course. When I contemplate the advantageous position in which the possession of this collection, and of the many other articles for which I am indebted to my friends in the public service, has now placed me, I cannot but look back with some degree of regret to the imperfect manner in which I fear my duties to my pupils were fulfilled, in the earlier period of my tenure of this chair. I console myself, however, with the reflection, that the defect was unavoidable, and that I have now laid the foundation of a collection, *unique* in its kind, and illustrative *exclusively* of subjects of paramount importance to the military and naval service of the country.

Here I must also acknowledge the several fasciculi of Lithographs from the museum of the medical officers of the army at Chatham, and the Statistical Reports on the health of the army and the fleet, printed under the authority of

Parliament, for which I am indebted to the courtesy of Sir James M'Grigor and Sir William Burnett. In these I find many apposite illustrations of my remarks. They are here more frequently, I believe, than anywhere else, brought under the notice of the pupils ; and it is, I apprehend, only in courses of this kind that the information contained in these voluminous records can be fully appreciated or advantageously diffused. I have seen nothing to change the opinion which I expressed upon this point seven years ago in the following words :—" These reports have been prepared at an enormous amount of labour to the authorities at the Horse Guards, the Army Medical Board, and the Admiralty, and at a very considerable pecuniary expense to the public. All this labour, all this expense, will, I confidently assert, be in a great measure lost to the service, unless means are taken to concentrate the valuable information embodied in these reports, to put it in an attractive and impressive form, and to keep it constantly before the present and the rising generation of army and navy surgeons."

Part Fourth.

PERISCOPE.

MATERIA MEDICA AND THERAPEUTICS.

SHAMPOOING IN MUSCULAR RHEUMATISM.   BY M. S. LE-PELLETIER.

The author, after alluding to the use of shampooing,[1] as proposed by Récamier, for the treatment of permanently contracted muscles, calls attention to its employment in muscular rheumatism, an application of it which, he says, is little known, and consequently little practised. He has seen it employed in some cases of torticollis (by which, we presume, he here means stiff-neck from rheumatism), and has himself used it in pleurodynia with marked advantage. It would appear, at first sight, singular that shampooing, which is in itself painful, should be a remedy for affections such as pleurodynia and stiff-neck, in which the only symptom is the pain ; but a few trials of the practice will show that the pain, which is aggravated during the manipulation, disappears a few minutes afterwards, so that the respiratory movements, which immediately before were laborious, interrupted, and so painful as to extort cries from the patient, become easy and regular.

The author then enters upon the consideration of the way in which this practice produces a cure, and admits that he can offer no explanation of it. It does not seem to have occurred to him that the most simple explanation is, that in these affections there is a temporary inflammatory or congestive engorgement of the vessels of the affected muscle, and that these various manipulations remedy this by unloading the congested vessels, and giving an impulse to the local circulation.

The method of operating on the thoracic muscles, or back of the neck, is easy enough, as the parts below offer a firm resistance. The patient being so placed as to expose the affected side, the part is kneaded by the thumb, not by simple pressure, but a succession of movements of rotation on its axis, by which a much greater amount of force can be easily applied than by simple pressure.

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[1] The word which we have translated by shampooing is *massage*. Récamier's practice he calls *massage et percussion cadencée.*

In the case of stiff neck, there being no firm resisting parts in the front of the throat, a forced extension of the part may be substituted for the shampooing, the head being inclined as far as possible to the opposite side, so as to stretch the muscular fibres to their utmost normal limits, and thus the contraction, which is the mere result of the rheumatic affection, will yield. The shampooing ought to be continued for five or six minutes. The author says, that though painful in pleurodynia, the shampooing can be borne without the need for any anæsthetic.

He gives the following cases, illustrative of the efficacy of this plan of treatment :—

A young girl, in the month of January, after exposure to cold in the night, was seized with cough, and a violent pain in the lower and back part of the left side of the chest, which prevented her from coughing or breathing. She was feverish; with flushed face, hot skin, no appetite, and urgent thirst. She lay entirely on the affected side. On careful examination, nothing was heard but some sibilant râles, the signs of pneumonia and pleurisy were absent, and as the pain in the side was aggravated on pressure, the case appeared to be one of bronchitis with rheumatic pleurodynia. The author proposed to cure her immediately. He laid her on her right side, exposed the painful part, and strongly kneaded the muscles by rotatory movements of his thumb. After a few minutes he stopped, and asked her to draw a breath, and it was already done with tolerable ease. He continued the manipulation for a few minutes longer, and the patient now found that the pain was completely gone. She remained in bed during that day, was quite well by night, and next morning was able to rise and follow her usual occupations.

Another and similar case of pleurodynia, accompanied by slight articular pains, in a woman, is then given. The shampooing was done in the evening, the patient fell asleep, had a quiet night, and arose next morning quite free from pain.

A male attendant in one of the hospitals, after exposure to cold currents of air when on duty during the night, was affected by rheumatic stiffness of the back part of the left side of the neck, which had lasted for four days. The slightest movement gave him excruciating pain, and he kept his head inclined to the affected side, so as to relax the contracted muscles as much as possible. He could get no rest, from the impossibility of finding a comfortable position. The author shampooed the affected muscles in the usual way, but, from the exquisite sensibility of the part, had great difficulty at first in doing it regularly, but the patient gradually was able to bear it. After the kneading, he subjected the patient's head to violent movements towards the right side, and forwards towards the chest. After a few minutes the patient was able himself to make these movements, which previously had been impossible. The same manœuvre was recommenced, and after a few minutes the pain had almost completely disappeared, leaving only a slight stiffness in the parts first affected. He was not any more troubled with the pain, and resumed his duties that evening.

The author states that his experience is too limited to entitle him to say that this practice will be generally efficacious ; but he considers that his results render it worthy of trial, and that it is at least innocuous. He has not tried it in any but acute cases, and does not know whether it would be serviceable in chronic muscular rheumatism.—*L'Union Médicale*, Nov. 27 and 28, 1850.

[Few of our readers need to be told that the practice of shampooing, rubbing, and pinching for chronic rheumatism has long been known here. Unfortunately the practice fell into the hands of a few quacks, well known as "nipping doctors," one of which worthies professes not only to have a peculiar virtue in the touch of his thumb, but with a prudent foresight to family prosperity, maintains that his son, a boy, inherits the same heaven-born faculty. We do not know that the practice has been applied so decidedly, as M. Le-P. recommends, to the painful though not dangerous affections above alluded to ; but it seems worthy of a fair trial in moderation. He says that the manipula-

tions, though painful, are not so to such an extent as to call for the use of any anæsthetic. This may be true as regards the thumbing of a pleurodynia; but we should think that few persons who have ever had a severe crick in the neck, would be fond of submitting to "extension of the muscles to their utmost normal limits," without having a bottle of chloroform at hand. We are sorry to find the author disposed to connect this system of treatment with the barbarous practice of treating fissure of the anus by forced dilatation of the sphincter. Even if the latter practice were to be approved of, instead of being a disgrace to the surgery of any civilised country where such a thing as a bistoury is known, the cases have no resemblance. The contraction of the sphincter in fissure is a spasm from sympathetic irritation, and is not comparable with a rheumatic affection.]

DETERMINATION OF THE QUALITY OF OPIUM. BY M. GULLERMOND.

This process for determining the amount of morphia in opium is simple and easy of execution. A sample of about 15 parts (the author takes 15 grammes, equal to half-an-ounce) is to be selected from different portions of the mass of opium under trial. This is to be rubbed in a mortar with 60 parts (by weight) of alcohol at 70 degrees (density ·890), thrown upon a cloth, and expressed to separate the tincture. The residue is again treated with 40 parts of alcohol of the same strength, and the united tinctures are to be received in a wide-mouthed bottle, containing 60 parts, by weight, of ammonia (density ·923, we presume, according to the French codex). In twelve hours the result is obtained; the morphia is separated, but accompanied by a greater or less amount of narcotine, the morphia lining the sides of the bottle under the form of coloured crystals, rather large and rough to the touch; the narcotine being found in small pearly crystals, white, and very light. The crystals are to be collected on a cloth, and washed several times with water, to separate the meconate of ammonia which adheres to them. They are then to be thrown into a small cup full of water. The narcotine, which is very light, remains suspended in the liquid, and can be readily separated by decantation from the morphia, which, remaining at the bottom, can be collected, dried, and weighed. An opium, to be of good quality, ought to yield in this way from 1·25 to 15·0 of crystallised morphia for 15 of opium; some samples yield 1·75.

This process, which succeeds perfectly well with opiums of good and middling quality, does not succeed with opiums which are poor in morphia or very resinous; but the fact of their not giving results, shows that they are of inferior quality, and ought to be rejected.—*Bulletin de Thérapeutique*, Feb. 15, 1850.

NEW ADHESIVE DRESSING. BY DR MELLEZ, OF RAON L'ETAPE.

The eagerness with which collodion was adopted by many practitioners, shows their want of satisfaction with the adhesive materials commonly in use. Certain disadvantages attach to all the ordinary means of keeping wounds in apposition, such as sutures, adhesive and isinglass plasters. Collodion, which possesses many valuable qualities as an adhesive, requires, in order to give satisfactory results, to be of a precise degree of concentration, and, like other dressings, demands, in order to be nicely applied to wounds, the aid of assistants, which is not always at the command of the surgeon, especially in country practice, where he must often operate without the aid of others, and where the patients cannot be visited, except at long intervals.

From his dissatisfaction with the ordinary adhesive dressings applied under such circumstances, Dr Mellez was led to adopt a solution of "gum lac," which is much used in the arts as a varnish and adhesive.

He uses a solution of this substance in spirit of wine, made with the aid of a moderate heat, and in such proportion as to give a mixture having the consistence of jelly, or nearly approaching to it. It can be made in a common wide-mouthed bottle, and a simple cork suffices for its preservation. When he uses it, he spreads it with a spatula upon pieces of cloth or taffetas, cut to the size

required. According to him, it possesses all the good properties of collodion, and even in a higher degree than that substance—viz., contraction during its dessication, impermeability to air, absence of all irritating action on the skin or wound, intimate adherence to the skin, and resistance to the action of water, fatty matters, or the discharges from the wound. It has not, like collodion, the quality of being colourless; but he believes that it might, if required, be decolorised, and, if applied upon animal membrane, would furnish a transparent dressing. It does not dry so quickly as collodion, but that is the only advantage the latter possesses. The lac dressing, however, does not require so long time as to be inconvenient to the surgeon. Moreover, it is not indispensable for the lac, as it is for the collodion, that the skin be absolutely dry. It has, further, the advantage (not to be overlooked) of being more moderate in cost.—*Bulletin de Thérapeutique*, March 1850.

[We had occasion, the other day, to use, as a makeshift for dressing a small wound, a preparation sold under the name of "liquid glue," and which we believe to be a solution of lac in pyroxylic spirit. So far as this little trial goes, we can say that it answered very well. Dr Mellez overrates the importance of collodion as an adhesive. It is little employed here for dressing wounds, but is useful for covering up small abrasions or cuts on the hands, to keep out dirt; and it also answers well as an application to incipient bed sores. We question if the lac dressing, even admitting it to possess all the qualities ascribed to it, is likely to supersede the common adhesive strapping, which is just as easily applied, which does not irritate wounds if they are properly brought together, and which certainly (for a country doctor) is more easily carried about than the bottle of the lac solution.]

MEDICINE.

TREATMENT OF THE RENAL COMPLICATION IN CASES OF ORGANIC DISEASE OF THE HEART. BY DR CHARLES J. B. WILLIAMS.

The complication of kidney disease, evinced by the presence of albumen in the urine, is, in its early stage, by no means so intractable as is commonly supposed. Cupping and large blisters to the loins, with a few doses of hydragogue purgatives, have often succeeded in restoring the urine to a healthy state, and removing all symptoms of this complication, even where it had proceeded to the length of causing dropsy. The hydragogue most suitable to these cases is the bitartrate of potass, in doses of from half-an-ounce to an ounce taken fasting, with a little ginger syrup in water. Its operation, if tardy, may be quickened by the addition of a few grains of gamboge or jalap, or a drop of croton oil; but these offend the stomach and injure the appetite more than the cream of tartar alone. The same objection exists against elaterium, which has the further disadvantage of sometimes seriously depressing the heart's action; but when other means fail, we are constrained to resort to it; and although it gives him a terrible shake, it will sometimes rescue a patient from the rising waters of the dropsical flood. It has appeared to me to disorder least, when given in the dose of from a quarter to half a grain in a pill, with two or three drops of calomel and a drop of creasote. Mercury is generally considered unsuited to cases of albuminuria, on account of its tendency to cause excessive and depressing salivation, even in small doses; but this effect is, I believe, confined to the more advanced stages of kidney disease, in which the urine is of low specific gravity as well as albuminous. Where, together with albumen, there is a considerable amount of urinary matter, whether dissolved as urea, or precipitated as lithate of ammonia, and especially when the urine is also acid, I find mercury to induce no such excessive influence, but to be valuable in aiding the operation of other purgatives and diuretics. After blisters and hydragogue purgatives, sometimes aided by the warm bath (which,

however, I have found very uncertain), have somewhat relieved the congestion of the kidneys, they become amenable to the influence of some diuretics, particularly digitalis, taraxacum, scoparium, diosma, with iodide of potassium, acetate of potass, benzoate of ammonia, or some of the saline diuretics before mentioned. The tincture of cantharides is also suited for this period of the treatment; and although an uncertain diuretic, and one that should not be continued if it do not speedily operate, it sometimes restores the lost powers of secretion better than any other remedy. It may be given in doses of from ten to forty minims, combined with bicarbonate of potass, mucilage, and a little henbane or conium. The longer the renal complication lasts, the more it impairs the quality of the blood, and produces spanæmia and tendency to dropsy; and it becomes an object to counteract this by the exhibition of iron. Generally, this remedy is not well borne, soon causing a diminished flow of urine and increase of albumen; but in some instances a few grains of citrate of iron, or a few drops of the muriated tincture, have been added to a diuretic draught with safety and advantage. In proportion as the renal disease becomes confirmed and permanent by the substitution of exudation-matter for the proper secreting cells, and by the subsequent fatty degeneration of this matter, or by its off-casting and the atrophy of the organ, the case becomes less and less susceptible of relief. The blood, impoverished, yet loaded with excrementitious matter, irritates all the organs and vessels through which it passes; and not only are the cavities and cellular textures distended with dropsical effusions, but low inflammations occur there also, and harrass the patient with a variety of new sufferings, before his final deliverance. In many instances, I have ascertained the presence of urea and uric acid in the serum thus effused; and I have known the impregnation so strong, that the liquid, oozing from punctures in the legs, or from an unhealed tap-wound of the abdomen, has had a strong urinous smell, and has been found actually to contain more urea than the serous fluid which has passed by the kidneys. It is not marvellous if medicine can do little in such a subverted order of function and structure; but it has appeared wonderful to me how life has been retained, and the diseased heart has gone on working, in some instances for days, and even for weeks, in apparent defiance of all that are commonly considered as the laws of the functions. Almost the only useful treatment in this extremity, is by stimulants: and in addition to the usual vinous and spirituous forms, which are often tried in their most attractive varieties, as they may best please the palate of the poor sufferer, I may mention the chlorate of potass, as a medicine which seems, sometimes, to have a kind of reviving effect even in such extreme states. In doses of from five to fifteen grains, with carbonate of ammonia and a little syrup and water, it may be given every hour or two; it sometimes seems to rekindle the dying embers of life so distinctly, as to make one again reflect on a parallel (which has been only revived by Liebig) between vital chemistry and the process of combustion.—*Lond. Jour. of Medicine*, May 1850.

MICROSCOPIC EXAMINATION OF HUMAN URINE.

On evaporating fresh urine to one-half or one-third of its bulk, a pellicle is seen to form; this pellicle, examined microscopically, is found to be composed of an amorphous mass, with a few crystals of lithate of soda, and of neutral phosphate of lime. This phosphate is not identical with the phosphate of the bones, and is similar to that formed when the soluble salt of lime is brought in contact with a solution of phosphate of soda. If the evaporation of the liquid be pushed still further, and it be then allowed to stand for a few hours, a quantity of chloride of sodium and of creatine is formed, which may be easily distinguished by the polariscope. At a later period still, crystals of uric acid and urate of soda may be distinguished.

To crystallise the other substances contained in urine, we proceed as follows. We filter the liquid, when it has attained the consistence of syrup, and then

divide it into three parts; the smallest of these is evaporated to dryness, and then treated with alcohol, which dissolves the urea. The characteristic crystals of the nitrate or oxalate of urea may be formed by adding a drop of nitric or oxalic acid to the alcoholic solution, and may be recognised by means of the microscope.

To another portion of the liquid, we add a few drops of solution of chloruret of zinc, and allow it to stand for two days ; at the end of this period a double salt of chloruret of zinc and of creatinine is formed, and may be easily distinguished either by the naked eye or by means of the microscope.

The third portion of the liquid is introduced into a test glass, and mixed with thrice its volume of absolute alcohol. In twelve hours crystals appear on the sides of the glass,—these are neutral phosphate of soda, with alkaline reaction, as may be demonstrated by analysis, or by studying their form. The mixture must be allowed to stand for twenty-four hours longer. New crystals form upon the glass,—these are acid phosphate of soda, as their form and reactions show. Phosphate of lime and magnesia is formed on adding ammonia.—*MM. Robin et Verdeil, Compte Rendu de la Société de Biologie: Gazette Méd. de Paris,* 1850, No. 17.

SYPHILITIC VACCINATION. BY M. DIDAY.

Our readers will probably smile at the title of this article ; yet, on the 10th September, a memoir on the subject was actually presented to the Académie des Sciences by M. Diday. Starting with the doctrine, that the constitutional symptoms of syphilis attack an individual but once in a lifetime, like variola, scarlatina, &c., M. Diday imagined that, by artificially provoking the development of syphilis in an individual, he could protect him from any risk of a future attack. With the view of testing the truth of this precious doctrine, the French Jenner collected, on the 28th June 1848, sixteen hospital patients, all affected with recent primary sores, but none of whom had ever had any symptom of constitutional syphilis. Another patient, labouring under tertiary symptoms, was then selected, and a periosteal tumour on his person having been cut into, a portion of the blood was inserted, by means of two superficial punctures, into the system of each of the sixteen. Six months having elapsed, all these patients were visited by different physicians; one only was found to be suffering from secondary symptoms; and he, when the operation was performed, had an *indurated chancre*. Statistics show, that the secondary symptoms follow the primary, in a larger proportion of cases than one in sixteen, and M. Diday accordingly proposed, that all young people should be inoculated with syphilis to preserve them against its future attacks.

As a companion to, or rather as the parent of the above proposal, we may notice the project of a prophylactic anti-choleraic syphilitic inoculation, seriously propounded to the same Academy, through the Minister of Commerce, by Dr Provençal of Cagnes (Var.) Having been informed that, while the other hospitals of Paris were infected by the pestilence, that occupied by the male venereal cases was, for a time, alone spared, Dr Provençal at once concluded, that there was an antagonism between syphilis and cholera, and that inoculation with the virus of syphilis was deserving of trial, as a preservative against the influence of the epidemic. This hopeful proposal was remitted to the cholera committee of the Académie, and Gaultier de Claubry, in their name, reported, that Dr Provençal's proposed practice merited formal reprobation, hinting, at the same time, that the law would visit with severe penalties any one who should be fool enough to follow it.—(*Archives Générales de Médecine,* 1849). We select the foregoing instances as choice specimens of the absurdities to which false logic and love for novelty may lead. The very foundation of M. Diday's theory is insecure ; for neither is it shown, on trustworthy evidence, that an individual can have only one attack of constitutional symptoms of syphilis in a lifetime; nor, if we exclude the above erroneous axiom, does the slightest analogy exist between syphilis, small-pox, and the

contagious exanthemata. Further, his experiments are good for nothing. The simple fact, of puncturing a patient's arm with a lancet, which has opened a node upon another patient, does not necessarily imply, that syphilis has been conveyed in its secondary and yet *latent* form, from the latter to the former; nay, if we are to believe the careful experiments of Ricord and others, no result whatever is to be looked for from such an operation. We also desiderate information as to the treatment by which the sixteen chancres were cured; but, presuming that ordinary hospital practice was followed, we are not astonished to find, that after the lapse of six months, one only had been succeeded by secondary symptoms, and that one, it may be, the only *true chancre* of the lot. We need not seriously attempt to prove the fallacy of Mr Provençal's logic, for the experience of every hospital physician who has seen much of cholera, the statistics of other institutions for the reception of venereal cases, and, we believe, the subsequent appearance of the epidemic at the Hôpital du Midi itself, sufficiently disprove his statements, and confirm the verdict pronounced by Gualtier de Claubry.

MIDWIFERY, AND DISEASES PECULIAR TO WOMEN.

HEMORRHAGE AFTER DELIVERY.   BY M. DUBOIS.

The organic conditions which oppose the discharge of blood after delivery are the following :—

1. The contraction of the uterine walls, which considerably diminishes the capacity of the vast vascular apparatus developed in the substance of the uterus under the influence of pregnancy.

2. The absence, from the uterine cavity, of the living organism, which constantly attracted the blood towards itself, and consequently towards the uterus.

3. The increase of the natural tortuosities of the uterine vessels, in consequence of the contraction of the uterine walls.

4. The obliteration, by small clots, of the extremities of the tortuous utero-placental arteries, which remain upon the internal surface of the uterus after the expulsion of the placenta.

Of these causes, the most efficient is, beyond a doubt, the complete expulsion of the ovum, because by this means is removed from the uterus the stimulus which attracted the blood towards it, and the organ diminishes considerably in bulk in contracting upon itself.

Hemorrhage after delivery may be the result of the following causes :—

1. The presence of the placenta, or of large clots of blood in the uterine cavity, which in some sort take the place of the ovum, stimulate the afflux of blood, irritate the uterus, distend it, and prevent its contracting upon itself.

2. The failure of the contraction of the uterine fibres, uterine inertia,—a cause which most accoucheurs consider the most frequent of these hemorrhages.

3. Independently of other causes, we ought to admit, in certain cases, that, resulting from the force of the abnormal impulse of the blood received by the uterine vessels,—a force which is occasionally abnormally strong, and causes the blood to pass beyond its proper limits,—namely, the point where the vessels have been ruptured. In fact, we observe, after the rupture of the utero-placental vessels, the same phenomena as take place after section of the umbilical cord. Ordinarily, as soon as the cord is cut, the blood ceases to flow towards it, and none comes to be discharged at the point of section ; but in certain exceptional cases, the force of the impulse of the blood being too great, that fluid continues to flow towards the cord, and passing the limit of the point of section, is discharged externally ; in the same manner, after the rupture of the utero-placental vessels, the blood ceases to flow towards them with the same force, except in some cases where the blood retaining a great force of impulse, passes the ruptured extremities of the vessels.

In all severe external hemorrhages, there is, at the same time, accumulation of blood internally. The one is recognised by the abundant discharge of blood externally, the other by the rapid loss of strength, and the increase of the size of the uterine tumour, accompanied by a feeling of heat over the whole abdomen. It is not to be supposed that the uterus can be so distended by the accumulation of blood as to acquire the bulk of the pregnant uterus at the full time ; neither is it the case, as is stated in many treatises on midwifery, that the uterus in these cases remains soft, and allows itself to be distended like a bladder. On the contrary, the uterine fibres having come together upon themselves during labour, cannot be again distended without re-acting and contraction following. If the abdominal parietes are not overloaded with adipose tissue, the contractions may be felt through them. These contractions have power sufficient to prevent the excessive distention of the uterus, although they may not be so strong as to expel the clot.

To arrest the discharge of blood is the first and chief object of treatment. For this purpose a number of means have been proposed, which may be arranged in two classes ;—in the first, are placed all those which produce contraction of the walls of the uterus, and consequent diminution of the calibre of its blood-vessels ; in the second, are placed the means by which (those of the first class failing) the vessels circulating the blood may be acted upon, and the current of blood in them diminished or arrested. Lastly, there may be added the use of opium in large doses, as proposed by Duncan Stewart.

The means of the first class are—

1. Friction and other manipulations on that part of the uterus which is accessible to the hand through the abdominal walls, for the purpose of irritating the uterine walls, and causing their contraction.

2. The introduction of the hand into the uterine cavity, both for the purpose of removing the clots, and in order to irritate the uterus, so as to bring on contraction in it by prolonging the continuance in its cavity of a hard foreign body having active and irritating movements.

3. Refrigerants, used either externally, by applying cold cloths or the cold affusion ; or internally, in the form of injections of iced water, or of vinegar and water, into the vagina and uterus.

4. Refrigerants introduced into the intestinal canal, whether as cold drinks into the stomach, or cold lavements into the rectum.

5. The introduction of astringent, or even mild, caustic substances into the uterine cavity, such as vinegar, lemon-juice, solution of alum, solution of sulphate of iron, &c. &c.

6. Galvanism applied to the internal surface of the uterus.

7. Lastly, ergot of rye, probably the most efficient of all these means.

The means of the second class are—

1. The application of a binder, properly tightened around the abdomen, to afford a firmer support to the uterus in its contractions, by augmenting the force of the abdominal walls.

2. Direct pressure applied to the extremities of the vessels pouring out the blood, by means of the hand introduced into the uterine cavity.

3. The use of the plug, as recommended by Leroux, who employed it with success, as a means of directly favouring the coagulation of the blood in the vessels. This plan certainly does not possess the value attached to it by Leroux.

4. Compression of the great vessels which bring the blood to the uterus. This may be effected in various ways, as by compressing indirectly the uterine vessels by the application of the hands upon the abdominal walls, or of a bandage well tightened around the abdomen, or by compressing indirectly the great vessels, and in particular, the aorta, by pressing the uterus with the hands firmly against the anterior surface of the vertebral column ; or lastly, by compressing the aorta directly through the abdominal walls, by means of the fingers applied firmly against the vertebral column above the uterine tumour.

In the last place, it is necessary to mention the use of large doses of opium, a practice in some degree empirical, but which has been found sometimes successful, although it cannot be considered as generally sure and efficient.

Of these numerous means which have been proposed,—which are beneficial, and which are useless or injurious ?

Cold injections into the uterine cavity should be completely laid aside. Madame Lachapelle, who had frequently employed them, gave them up entirely, having remarked, that women submitted to this treatment were frequently seized with fits of shivering shortly after. This means, then, is not innocuous, and ought to be laid aside.

Astringent injections into the uterine cavity should be laid aside for the same reason.

Cold lavements may have some tonic astringent action transmissible to the genital organs from the rectum ; but this action is necessarily very temporary, and altogether insufficient to arrest the flow of blood. Further, the use of this means necessitates a certain disturbance of the absolute repose, in the horizontal position, which the woman ought to maintain. This plan, then, should also be laid aside as unsuitable and inefficient.

Substances saturated with astringent liquids, as sponges or compresses dipped in vinegar, lemon-juice, or most astringent fluids, should be completely rejected, as being dangerous. Their introduction into the uterine cavity necessarily irritates the internal surface of the organ, and may be the cause of some puerperal inflammation. From this condemnation lemon-juice must be excluded, seeing that it has been employed with frequent success by accoucheurs of distinction.

Galvanism applied to the internal surface of the uterus has sometimes been employed with advantage, but it is a means difficult of use in ordinary practice.

Tight bandaging of the abdomen, recommended by accoucheurs of great experience, has certainly some value ; but it is of little utility, as it completely prevents the regular use of refrigerants, which are far more useful.

Compression of the vessels on the internal surface of the uterus by means of the hand, is not efficacious in arresting the flow of blood. In this way all the vessels are not compressed. And further, the proper contraction of the uterus is prevented by the presence of the hand. This mode of compression, then, should be completely laid aside.

The plug, recommended by Leroux, an experienced physician of Dijon, is a plan, the value of which ought to be carefully considered. M. Velpeau distinctly approves of its use in certain cases of post-partum hemorrhage.

As used in the present day, the plug is so applied as to close the mouth of the uterus, and consequently retain the effused blood within the uterus. This retained blood is the only obstacle to the continuance of the hemorrhage. Now this obstacle is very slight, and quite insufficient to close the vascular orifices completely. In spite, however, of what theory teaches, there are numerous cases to prove that the use of the plug is often successful. Nevertheless, the facts and the theory are not contradictory of each other. The apparent discordance between them is explained by considering the nature of the plug used by Leroux of Dijon in his successful cases. Leroux saturated a piece of lint in vinegar, and introduced it into the uterine cavity, then he placed another piece of lint, similarly saturated, in the vagina. This plan has little resemblance to the mode of plugging practised in the present time,—a plan which would have no effect, but to change an external into an internal hemorrhage. The use of the plug, then, should be completely laid aside.

The last mode of treatment, of which M. Dubois condemns the use, is the administration of opium in large doses.

The following are the means specially recommended by M. Dubois :—

1. To lay the woman in a horizontal position, on a somewhat hard bed, and to have the pelvis a little elevated above the level of the rest of the body.

2. To maintain in the apartment a cooling atmosphere, at as low a temperature as possible.

3. If the uterus is more bulky than it ought to be, to introduce the hand into its cavity, to bring on contraction by means of slight frictions, and to remove the clots frequently contained in it.

4. To induce uterine contractions, by constantly rubbing the surface of the abdominal parietes.

5. To apply at the same time to the hypogastrium, cloths saturated with cold water.

6. At the same time, also, to administer two or three drachms of ergot of rye in four or six doses, at intervals of five minutes.

7. Lastly, if all the preceding means are insufficient to arrest the hemorrhage, to compress directly the aorta.

PRECOCIOUS MENSTRUATION. BY M. PAUL DUBOIS.

Every one is aware that menstruation is one of the functions most influenced by climate,—that it is established at an age the less advanced according as the climate is more warm. This circumstance, however, is not the only one which regulates the time when the function commences. One of the conditions which has the greatest influence in the matter, is the constitution of the organs themselves. The reality of this influence is put beyond a doubt, when we consider that the early as well as the late appearance of the menses may be hereditary ; and it is well known how great is the extent of hereditary influence upon the intimate constitution, as well as upon the external conformation of organs. Several times M. Dubois has observed the menses appear at the same period very early or very late, in several members of the same family.

Another circumstance, which has the greatest influence upon the coming on of menstruation, is the moral condition of the young females. Thus in cities, and especially in workshops, where young girls are constantly in the society of individuals of the other sex, the menstrual function is developed much earlier than in the country, or under contrary circumstances.

In a meridional country of Asia, where the laws permit, and custom favours marriage at an age still within infancy, we find that the menses are established at a very early age ; whilst, in another country of Asia, more meridional than the former, and having a warmer climate, but where infantile marriages are totally prohibited, the menses do not appear till a more advanced age.—*Gazette des Hôpitaux*, 13th April 1850.

AN AFFECTION OF THE SYMPHYSES OF THE PELVIS IN LYING-IN WOMEN, WHICH MAY BE MISTAKEN FOR NEURALGIA ISCHIADICA. BY M. PIGEOLET.

The author lays down the following propositions :—1. The symphyses of the pelvic bones in the female are so constructed as in certain cases to exhibit more elasticity than in the male. 2. During pregnancy the articulations of the pelvis participate in the increased flow of blood which the whole uterine system experiences. The ligaments become so softened as to render the movements difficult, and fatigue is easily induced. This change increases till the end of pregnancy. 3. The relaxation may so increase that the bones may become moveable, and may be separated from one another. 4. The relaxation disappears in the same manner, and along with the child-bed symptoms, in consequence of the withdrawal from the affected parts of the flow of blood, which during pregnancy is increased. 5. The relaxation may, however, persist longer, and in a morbid degree, in spite of the disappearance of all the child-bed symptoms. 6. With this morbid condition there may be associated inflammation of the ligaments, of the bones, and of the cartilages, or caries of the bones.—*Schmidt's Jahrbücher*, No. II., 1849, p. 217.

UTERINE POLYPUS PASSING THROUGH THE ABDOMINAL PARIETES. BY M. LOIR.

This case is regarded, both by M. Loir and by M. Huguier, who was appointed by the Society of Surgery of Paris to report upon it, as *unique*, only three others which bear the least resemblance to it being known to them. The first of these is related by Roux, in his Memoir on Fibrous Bodies of the Uterus, and in it the polypus wore an opening through the upper and posterior part of the vagina, and became lodged between that canal and the rectum. In the second, related by M. Bérard, after the tumour had traversed the posterior wall of the vulvo-uterine canal it was expelled through the perineum. In a third case (Lisfranc's), the polypus perforated the recto-vaginal septum, and made its way into the gut. In all these cases, the thickness of tissue that had to be traversed was inconsiderable.

The subject of the present case was a laundress, æt. 51, having a strong constitution. At 46, the menses had become arrested, reappeared irregularly two years after, and were finally replaced by metrorrhagia, for which she underwent various treatment before she came under M. Loir's notice, May 12th, 1847. Her general health was then as yet unaffected. On examination, the womb was found considerably enlarged above the pubes, while at the upper part of the vagina a soft polypous mass was felt. This last came away while it was attempted to pass a ligature around it, and the profuse hemorrhages, to which she had been liable, ceased. The cervix was found healthy, but through it another tumour could be felt, and the bulk of the uterus had not diminished. On the 19th of June, pains of a character indicative of uterine action set in, but, instead of the os dilating, it closed, so that the finger could no longer be passed through it. At the same time the tumour of the abdomen became more prominent just above the pubes, and the skin covering it reddened. The digestive organs were now disturbed, and febrile action was set up. During the next fortnight eschars were formed, a purulent sanies flowing as they became detached, and suppurating *engorgements* extended towards the iliac fossæ. By the 8th of July the detached eschars had exposed a blackish substance, equal to two fists in size, and accompanied by an intolerable gangrenous smell. On the 14th the most protruding portion of this mass was removed; but the woman continued sinking until the 31st, when she died.

At the post-mortem, thirty hours after death, the aperture was found to be nine centimetres long by seven broad, and through it a pediculated tumour, still as large as a fist, protruded. The uterus, as after the Cæsarean operation, was found adhering by solid cellular substance on its entire anterior circumference to the aperture in the abdominal parietes. No effusion, or false membrane, was found in the peritoneal cavity; and the epiploon, loaded with fat, seemed to play a great part in forming the adhesions between the uterus and the parietes. The cellular tissue in the femoral and iliac regions was infiltrated by pus, and was in part gangrenous. The muscular structure of the uterus was found remarkably developed and contracted as after delivery, except at the anterior wall, which was much thinner, and in the substance of which an irregular aperture, six centimetres in diameter, was traversed by the polypus, the pedicle of which was attached to the left side of the anterior portion of the organ. The pedicles of the two other polypi were also observed, but otherwise the internal surface of the organ was healthy. The author regards the hypertrophied contracted portion of the uterus as having operated actively in expelling the polypus through the thin and passive anterior portion.

In commenting upon the case, M. Huguier objects to the author's explanation of the passage of the polypus through the agency of the contractions of the hypertrophied portions of the uterus. For this to avail, the tumour must have originated in some other part than the very walls of the organ itself, whereas, in fact, it was formed at the expense of the entire left portion of the anterior uterine wall, leaving unaffected only the superficial layers—a fifth of

its substance at most. We cannot say that the mass was thrust from the interior of the uterus outwards, traversing the anterior wall, since it was this wall itself, degenerated and hypertrophied, that constituted it. M. Huguier offers the following explanation of the occurrence. In point of fact, the intimate blending of the two pedicles showed that the polypus that was removed by the vagina, and the polypus that traversed the walls of the abdomen, were but two lobes of one and the same structure. One of these lobes extended towards the cavity of the uterus, and was removed; the other extended towards the vesico-vaginal cul-de-sac, distending, ulcerating, and even mortifying, the superficial layers not implicated. After the removal of the vaginal portion, the other, no longer kept down by this, took on a more active development towards the pubes, and the process of its elimination commenced.— *Brit. and For. Med.-Chir. Review*, April 1850.

MEDICAL JURISPRUDENCE.

TRIAL OF PROFESSOR WEBSTER FOR THE MURDER OF DR PARKMAN.

Every English newspaper has recently contained some account of this extraordinary trial, which recently took place in America, or of the circumstances which led to it. The medical evidence, by which the remains of the murdered man were identified, has been published at considerable length in the "Boston Medical and Surgical Journal," and transcribed into the "Dublin Medical Press." We lay it before our readers almost without abridgment. It is necessary to premise, that shortly after the disappearance of Dr Parkman, it was ascertained that he had been last seen *entering* the rooms in the Medical College occupied by Dr Webster, and that the supposed object of his visit was to claim the amount of a debt due to him by Professor Webster.

The Medical College was visited by the police as early as Monday, the 26th of November last, three days after Dr Parkman was missed; and the lecture and dissecting-rooms, the attic, the vault connected with the dissecting-room, &c., were searched. Professor Webster's apartment was found locked, but they were politely admitted by him after knocking twice, and were told they might look, but were requested not to turn things over. On an officer making a motion to go to a private room, at the end of which is a small closet or privy, Professor Webster told them that valuable and dangerous articles were in that room, and it was not searched. There was then a bright fire in the furnace in which the bones were afterwards found, and the stove contained ashes, which were only partially examined. Some spots were noticed on the stairs, but did not receive particular attention. Search was made in the building each day afterwards, but nothing was found till the following Friday afternoon.

Mr Tukey, the city Marshal, testified—On the evening of Friday, 30th November, I received certain information, and proceeded to the house of Mr Shaw; afterwards to the Medical College, in company with Dr Henry J. Bigelow; found in Littlefield's apartment officers Trenholm and Clapp; we then all went to a trap-door in Littlefield's apartment, near the lower laboratory, which allowed passage into the cellar below; in the brick wall at the corner of the cellar was found a hole, some eighteen inches square, newly broken. I took a lamp, and reaching into the hole, perceived what I thought to be pieces of flesh; the sea-water was flowing in and out, but nothing else could pass out. I directed Mr Trenholm to take out the remains; they were three pieces—apparently a portion of a body, a part of a thigh and leg. Dr Bigelow said they were human, but not a dissection-subject. While here, heard a noise in Professor Webster's room above, and some one said probably, he had come. We went up. I remained in the outer room, while the officers went into the laboratory to search for the person supposed to have been heard. They reported that they could find no one. I then followed the officers into the laboratory, and stopped near

the furnace; Mr Clapp took from the ashes what I discovered were fragments of bones; I then gave directions that nothing else should be disturbed except by a commission from court. Gave directions to some officers to proceed to Cambridge and arrest Professor Webster.

Mr Parker stated to Professor Webster that some discoveries had been made at the Medical College, and that he could go there and make some explanations, if he chose; Professor Webster consented to go, and was assisted to a carriage by officers. Mr Leighton, the turnkey, and myself, rode inside with him; he was still apparently helpless from agitation. On the way, he complained of the manner of his arrest, and being taken from his family. He was led up the front steps of the college, entered by south front door, and went into the lecture-room on the left; he was supported by Leighton and Cummings; next went into the small laboratory; the door leading from the lecture-room to the rear was broken open; somebody then inquired for the key of the adjoining room; Professor Webster said that was his private room, and contained some danger-ous articles; that Mr Clapp had the key of it; the door was finally broken open with an axe, and we entered; saw a coat near the door; Professor Web-ster said that was worn by him when he lectured; he requested the officers to be careful in handling things, or they would do mischief. Some person in-quired where the chimney was that was heated? it was pointed out, and also the furnace; some one took off the cover from the furnace and took out pieces of bone, when I directed that it should not be further disturbed. There were some minerals, but they were all left alone. Professor Webster called again for water here, but could not drink. I never saw a man appear so before; the water seemed to be offensive to him; he snapped his teeth on touching the tumbler; he was more excited in this room than above; this was before he was shown the remains, I think. On the remains being placed before him, Mr Kingsley testifies—" These were put in presence of Professor Webster, who leaned against two officers as he looked on them, but he made no remark, neither was he asked any questions; he appeared excited, however, and not different from what he had been before; he stood within eight or nine feet of the remains at the time. We left, after looking at them for ten or fifteen minutes, and the prisoner was taken to the carriage. The next afternoon (Saturday), the upper parts of a body and thigh were found by officer Fuller in a tea chest. I was called from the upper laboratory to the lower, where I found the men drawing a tea chest into the middle of the room; it was turned up, and the body tumbled out, along with some *tan;* the thigh was inside the trunk, and the impression of the ends of the ribs was upon the flesh of the thigh, which was the left one; a large jack-knife also fell out of the chest, and a string was found tied round the body and legs; they were taken out and washed, and laid alongside of the other remains, which the officers had had in charge all the time from their being found." On Saturday the coroner removed the contents of the furnace, and he states on the trial that—" Towards the bottom a piece of artificial jaw was found, having in it some mineral teeth; could not say whether it was an entire block of manufactured teeth; it was put into the hands of Dr Winslow Lewis, jun.; the whole contents of the furnace occupied about a foot in depth; there were afterwards found two or three single teeth; the ashes remained after the bones, &c., were removed, and I gave directions that the whole should pass into the hands of the medical men and chemists, for examination of such parts as they individually chose." Both Mr Shaw and Mr Kingsley testified, as to the remains, that they were similar to the body of Dr Parkman. We now come to the medical evidence.

Dr Winslow Lewis, jun., sworn—I was one of the physicians who called at the college on Saturday, after Professor Webster's arrest; the others were Dr Martin Gay and Dr C. T. Jackson; Coroner Pratt requested me to attend; it was about three in the afternoon; I called on Dr G. H. Gay and Dr J. W. Stone, and also requested the assistance of Dr J. Wyman. The next morning

(Sunday) Dr Wyman took charge of the bones, and some other articles, supposed to have blood on them ; Drs Gay, Stone, and myself prepared a written report of what we particularly inspected, and rendered that statement to the coroner's jury. [The following is the report alluded to :—]

Post-mortem examination at the Boston Medical College, December 2, 1849.—Five portions of a human subject were examined,—a thorax, a pelvis, two thighs, and a left leg ; together with the contents of two boxes, containing various articles said to be taken from a furnace. The thorax and left thigh were discoloured, apparently with tan and some caustic substance ; the three remaining portions were white, fair, and appeared as if soaked in water. The cartilage on the head of the left thigh bone was coloured black.

Remains of Thorax.—Consisted of all the bones except the sternum ; fracture of the fifth right rib, apparently recent, and about four inches from division between ribs and sternum ; both clavicles and scapulæ present ; clavicles large; both lungs present, but collapsed ; left lung had pleural adhesions ; structure of both lungs apparently healthy. Anterior thoracic muscles cut up from the ribs about six inches from the centre on each side, and with the skin thrown on one side. Posterior portion of integuments from the left scapula to the lumbar vertebræ of a dark colour, and hardened ; remaining portion of integuments generally of a natural appearance, except a little greenness under the right axilla, probably from commencing decomposition ; and some blueness under the left axilla, leaving the skin soft and easily broken, through artificial action. An opening, slightly ragged, about an inch and a-half in length, under the left nipple, between the sixth and seventh ribs, extending into the chest. Remains of thoracic aorta and thoracic œsophagus present ; heart and diaphragm wanting ; trachea divided through the cricoid cartilage ; spleen contracted, externally granulated, and internally red ; left kidney in its natural position, and contracted ; no liver, right kidney, pancreas, stomach, or intestines. Sixteen vertebræ present, consisting of three lumbar, twelve dorsal, and the greater portion of the seventh cervical, which appeared to have been sawn through the upper part. Small quantity of long greyish hair on the front of the chest ; some stained dark-greyish hair on the back. Periosteum removed from the front part of several left ribs. Both arms severed in a very irregular and unscientific manner.

Pelvic Portion.—Consisted of the bones of pelvis, two of the inferior lumbar vertebræ, all the integuments, muscles, organs, &c., and the pelvic viscera generally ; all of the intestine remaining was about six inches of the rectum, through the anterior and external portion of which a section had been made, and the mucous coat had been separated from it four or five inches throughout the whole circumference, but not cut off at the lower end ; hair upon this portion of a sandy-grey ; both thighs severed from the pelvis in a very irregular manner ; integuments divided down to the pubes in the median line. On placing the pelvic portion in apposition with the thoracic, the third and fourth lumbar vertebræ corresponded precisely. The spinous process of the third lumbar vertebræ, with a portion of the transverse processes of the same, were absent from the thoracic portion, but were found attached to the fourth lumbar vertebræ, which was on the pelvic portion.

Right Thigh.—On being placed in apposition with the pelvic portion, the bone, flesh, and skin corresponded perfectly ; good muscular development, with but little of fatty matter ; patella attached ; some ossification of femoral artery.

Left Thigh.—Had a string with loose ends, about two and a-half feet long, tied round, just above the condyle ; patella attached. On being placed in apposition with the pelvis, the bones corresponded, but some portion of the skin and flesh appeared to have been removed, or contracted from artificial means. On the anterior surface of the thigh, and somewhat on other parts, there were appearances apparently of the action of fire, or some caustic matter.

Left Leg.—Of natural appearance, fair size, and on being placed in apposition with the left thigh, the articulation corresponded.

These portions appeared to belong to a person of between 50 and 60 years of age. The muscular system was well developed, and but very little of adipose matter. The fragments of bone found in the ashes and cinders from the furnace of Professor Webster's laboratory, contained in one of the boxes, were :— 1. Fragments of a cranium, thirty or forty pieces. 2. Fragments of a temporal bone. 3. Coronoid portion of the lower jaw, probably that of an elderly person. 4. A portion of the lower jaw, right side, containing a part of the dental canal. 5. A fragment of an atlas, or first cervical vertebræ. 6. The body of a cervical vertebra, probably the second or third. 7. Fragment of a humerus. 8. Terminal phalanx of a finger. 9. Fragments of a tibia or leg bone. 10. Fragments of metatarsal bones. 11. Right os calcis. 12. Right astragalus. 13. Several pieces of mineral teeth, the more perfect portions of which were teeth in a block, which, on being shown to Dr N. C. Keep, were identified as having been made by him for Dr George Parkman, and corresponded to the mould in Dr Keep's possession. Many fragments undetermined. Portion of ulna, and part of olecranon process. There was nothing in the appearance of the body that I should not have expected to have found in the body of Dr Parkman ; and I should think that the parts had been separated by some hand skilled in anatomy. It is my opinion that the five parts belonged to one and the same body.

Cross-examined.—I have been acquainted with Dr Parkman, and had been intimate with him ; I could not say that the idea would have arisen in my mind that the body was that of Dr Parkman had I not heard the rumour. That part of the chest in which there was a wound seemed to have been affected by some chemical agency ; it was easily torn ; I could not swear that there had been a stab ; the hole penetrated to the region of the heart ; I should think that about two gallons of blood could have been drawn from a live person corresponding in size with the parts we there examined ; I have no means of knowing what time would be required to burn up a human head ; as to how long a time it would take to consume the other portions of the body and contents missing, I cannot tell with any accuracy ; it would undoubtedly depend somewhat upon the intensity of the fire, and the kind of fuel used ; the lower limbs and muscles of the body were remarkably well developed, considering the slenderness of the chest.

By the Government—As a general thing, a person stabbed in the region of the heart would bleed more internally than externally,—that is, he would bleed more into the cavity of the chest ; the flow of blood in the arteries ceases very shortly after death, though it may flow from the veins twenty-four hours after death.

Dr James W. Stone sworn—Heard the testimony of Dr Lewis, and concurs in the same ; the muscles were exceedingly well developed ; I knew Dr Parkman ; there was nothing in these remains which I should not expect to find in his body ; he was a great and fast walker ; the removal of the breast bone was done in a surgical way ; should not think these remains could have been those of a subject for dissection.

Dr George H. Gay sworn—The separation of the parts of the body indicated some anatomical knowledge ; the head was apparently sawed off as is usually done by surgeons, and other separations were performed after surgical methods.

Dr Woodbridge Strong sworn—I am considerably versed in anatomy, and have made many post-mortem examinations : I have some experience in the matter of burning human remains ; soon after I came to Boston, years ago, the marshal of the district committed to my charge the dead body of a pirate ; the body was that of a robust man, and quite fleshy ; it was determined to burn up the flesh ; I commenced in the evening, and kept up a roaring wood-fire until morning, throwing on piece after piece of muscle and flesh, but at broad daylight there remained much unconsumed ; it requires very strict attention to do

this business successfully, and the fuel is a matter of much consequence ; dry wood, and pitch pine in particular, is far better than coal ;. I saw the remains at the college, and discovered in the chest a clean cut, between the ribs, which it occurred to me might have been the cause of death ; the remains were as blood-less as any meat in the shambles, suggesting to me that he bled to death ; the skin had the appearance of that of an elderly person ; the body was narrow across the shoulders, and nearly corresponded with the width of the hips, which is unusual in males; the length of the body, too, was very marked; from all the appearances, the remains seemed to me to be those of Dr Parkman; their for-mation was especially like his, and I saw nothing in any way dissimilar from what I should expect to find in his body.

Dr Frederick S. Ainsworth sworn—I am Demonstrator of Anatomy at the Medical College ; every subject brought there for dissection passes through my hands ; I keep a regular account of all the subjects, and their disposal ; at the time of the examinations made at the college for the coroner's jury, I found none of my material missing ; I saw the remains taken from the privy, and am confident they never passed through my hands ; in subjects for dissection I inject the arteries with fluids to preserve the body ; none such were found in the remains referred to ; Professor Webster had no official intercourse or con-nexion with the anatomical department of the college ; the remains bore no indication of being dissected anatomically ; the person who cut up the body might have *seen* such performances before, but had not probably used the knife himself.

Dr C. Jackson sworn—Am a chemist by profession ; followed practical che-mistry for the last ten years; was called to the examination of the remains found at the Medical College on Saturday afternoon, December 1, 1849 ; met Dr M. Gay and Dr W. Lewis ; the chemical examination was assigned to Dr Gay and myself ; we were shown the remains of a human body, and the contents taken from a small open furnace ; took observation of the remains ; did not think they had been used for anatomical purposes ; they had not been dissect-ed ; the manner of opening the body I thought indicated some knowledge of ana-tomy ; heard the testimony of Drs Lewis, Stone, and Gay, and agree with it ; I was acquainted with the late Dr George Parkman ; he was a tall and slender man ; I thought him rather flat and broad on the pelvis, thin on the lateral view, and not so much so in front ; discovered nothing dissimilar from what I supposed to be the conformation of Dr Parkman ; the flesh showed indications of having been subjected to a strong solution of caustic potash. [The analysis of the contents of the furnace and other articles was presented in writing, to which Dr Jackson testified as given before the coroner, and Mr Bemis read it.] The bones had the appearance of being exposed to fire, were much broken, and partially fused among the cinders ; a tooth with a hole in it, having the appear-ance of having been filled by a dentist, a block of mineral teeth, globules of gold, a pearl shirt-button, pieces of an alloy of tin and lead were found ; the ashes yielded globules of gold and some silver ; thirty grains of gold were found ; examined the skin and flesh of the thorax, and found it corroded as if by potash, and submitted it to analysis ; it yielded strong alkali ; some parts of the skin appeared singed, as if subjected to the action of fire ; dissected out the arteries of the thigh, and delivered them to Dr Gay to see if any zinc or arsenic was to be found in them ; I was instructed by the attorney-general to take possession of articles left by Dr Gay (deceased); did so ; found the very papers that I delivered to Dr Gay, and gave them to Mr Crossley, who had begun the analysis for Dr Gay, to complete the examination ; potash softens and dissolves human flesh gradually, and when heat is applied very rapidly ; if attempting to dissolve a body in potash, would dissolve the potash and boil it, precisely as in making soap ; it would depend on so many circumstances, he could not tell precisely how long it would take to dissolve a body : if cut up in small pieces it might be done very rapidly ; it would take nearly half the weight of the body of potash, and would require a large kettle ; should think

it would take about 70 pounds of potash to have dissolved Dr Parkman's body ; less than that would have destroyed the possibility of identifying the remains; went through Professor Webster's laboratory ; the largest vessel I saw was a tin boiler, such as is used for washing clothes, about from a foot to fifteen inches square ; this vessel was not large enough to have disposed of a thorax or thigh without its being cut up in pieces ; potash is the best thing to dissolve a body, because it can be used in common vessels ; nitric acid would be the next best ; nitric acid would require vessels of porcelain or glass ; should think it would take about the weight of the body of nitric acid to dissolve it ; if heated it would give off very little nitrous acid gas, but if boiled a very large quantity; decomposition would be most rapid if it were boiled ; the gas is very disagreeable and unhealthy, but the draft of a chimney would protect the operator ; I saw there several bottles, containing five or six pounds each of nitric and muriatic acids ; there might have been ten pounds of nitric acid ; some drops of green liquid on the stairway leading from the rear of the lecture-room to the laboratory were taken up by Dr Gay by means of filtering paper ; I have since examined that liquid, and it was nitrate of copper ; the spots were numerous all over the staircase and side wall, most abundant towards the bottom; had the appearance of being spilt on each stair separately, and not running from one to another ; nitrate of copper is very dilatory in drying up ; its taste is very astringent, caustic, and like copper ; have transferred the microscopic examination of the action of nitrate of copper on blood to Dr Wyman ; a powerful microscope is the best instrument to discover the effect of acid upon blood ; he also took the pantaloons and slippers ; the *punch* pieces made of copper found in the ash-pit had nitrate of copper upon them ; they were of the same kind as others found in Professor Webster's drawer in the room above ; a large number was found in the ash-pit, much acted upon, showing that they had been used for making nitrate of copper; I think Dr Gay had the pearl shirt button, and I have not been able to find it ; I found forty-five grains and six-tenths of gold by washing my portion of the contents of the furnace ; Dr Gay found forty-seven grains in his ; Mr Andrews also brought me 81·05 grains ; total 173 grains 65-100ths ; the 173 grains would be worth about 6·95 dollars, standard value ; some gold still remains in the ashes in very fine particles ; the appearance of the bones taken from the furnace indicated that they had been subjected to great heat ; I have been acquainted with Professor Webster several years ; the large sheath-knife found in his laboratory at the college, I noticed in his laboratory in Mason Street in 1846 ; when it was shown to me on Monday or Tuesday in Grove Street College, it had the appearance that an attempt had been made to clean it ; it had whiting and oil upon it ; found this by scraping off the coating and analysing it ; the oil was not quite dry, was like soft putty; Dr Parkman was about my height, he appeared so when he stood erect ; I am a trifle over five feet eleven inches ; if flesh had been consumed in the furnace, the odour would have been carried off ; it was an assay furnace, and therefore covered when in action ; we saw the cover there ; it was of the kind used for an assay-furnace ; there was about half a peck of ashes, and a couple of quarts of cinders, and anthracite coal. *Cross-examined*—I should not have supposed the remains were those of Dr Parkman, if he had not been missing ; I draw no conclusions from the sea-salt with the potash ; it is found with potash ; some of the hair was curled and singed, as if it had been exposed to flame ; only one side of the thorax, its two ends and back, had been subjected to the action of potash ; the thigh found with the thorax had been softened by the action of fire as well as potash ; the head of the thigh bone was smoked ; if cut up into small pieces, and in a very large vessel, it would take but a few hours to dissolve the flesh, without the bones ; it would require weight for weight of acid and flesh, and heat to do it ; in nitric acid the bones might be dissolved in half a day ; the green fluid spots might have been several days on the wall ; they might have been there two weeks ; the oil and whiting near the handle of the knife I supposed were used to clean the silver on the

handle; the potash had not been long on the remains, it was still caustic; the softening was produced by the joint action of potash and fire; there was little effluvia from the body, it had an alkaline smell; the softening would be soon effected by the joint action of potash and fire, which gelatinised the skin; nitrate of copper would produce the same brown stains on Norway pine that we found on the stairs. [Exhibited spotted chips from the stairs.] Re-examined—The ashes were partly of wood and hard coal.

Richard Crossley sworn—I made experiments on certain blood-vessels, at the request of Dr Gay, to ascertain if they had been injected with arsenic acid, or chloride of zinc, and found no indication of those substances.

Dr N. C. Keep sworn—Am a physician and dentist; have been in practice nearly thirty years, and have given attention to mineral teeth; I knew Dr Parkman as early as 1822; in 1825 he employed me as his family dentist, and ever since that time, so far as I know; I was shown a block of mineral teeth by Dr Lewis, jun., on the Monday after Thanksgiving last; I recognised them as the teeth I made for Dr Parkman in 1846. [The teeth found in the furnace were exhibited to the witness.] These are the same as shown by Dr Lewis; Dr Parkman's mouth was peculiar in many respects, especially in the relation between the upper and lower jaws, and thus the impression left on my mind was very distinct; I remember these peculiarities with great exactness; here is the plaster cast of Dr Parkman's lower jaw taken from life; the natural teeth were cut off in the plaster cast, of which there were four, besides three stumps; he had lost all his upper teeth. [The witness then described the process of making the pattern plates by metallic dies.] Monday after Thanksgiving, Dr Lewis presented to me the portions of mineral teeth, saying he was requested to bring them to me for examination; on looking at them I recognised them to be the same teeth I had made for Dr Parkman; the most perfect portion which remained was the block belonging to the left side of the lower jaw; I recognised the shape and outline to be the same with those which I had laboured on so long; several of the other portions had been much injured by exposure to fire; I proceeded to look for the models by which those teeth were made; on comparing the most perfect block with the model, the resemblance was so striking, that I had no doubt; this portion which I now hold in my hand belonged to the right upper jaw; this belonged to the left upper; this is the remains of the front upper block, more injured than the others; the left lower block is nearly entire. [The witness here exhibited to the court and jury the left lower block of teeth, with the mould in which it was formed; he also explained to them the manner in which the teeth had been ground to give more room for the tongue.] I find imbedded with these portions of mineral teeth, portions of gold, and minute portions of bone; this small portion of bone is cancellated, peculiar to the jaw bone; the teeth were in the doctor's mouth the last time I saw him, the day before he disappeared; the presumption is very strong that they were in the mouth when the head was placed in the furnace, for when recently worn, they absorb small portions of water, which, when heated rapidly, would explode them, and they would go into a multitude of pieces; if the teeth had been removed from the head, the springs by which they were connected would have thrown them apart, and they would not probably have been found fused together; I find fused in with these mineral teeth a small portion of the natural jaw. Cross-examined—These teeth were all exhibited to me at the same time by Dr Lewis; I knew the teeth when I first saw them; Dr Parkman's name was written on the models at the time the teeth were made; I preserve models for use in case of accident; Dr Parkman had a former block, which was displaced.

Dr Noble, assistant to Dr Keep, testified to the same effect.

Dr Wyman sworn—I am Professor of Anatomy in Harvard College; on examining the thorax, I was struck with the fact, that the sternum was removed in the manner usual in post-mortem examinations, as well as separated from the collar bone and the first rib; the route which the knife passes is

such, that a person unacquainted with the operation would have great difficulty; there is only one way; the separation of the thigh bone from the hip indicated the same knowledge; I did not observe as to the separation of the head from the trunk; the saw is not usually employed for purposes of anatomical examination; the quantity of hair on the back was very unusual, on each side of the spine, and half or third of the way down the back; if death were occasioned by a blow, and the stab were immediate, I should look for a considerable flow of blood; post-mortem examinations are not necessarily attended with much flow of blood, though it is usual to spread cloth by the sides of the body; I examined certain spots on the sides of the stairway leading from the upper to the lower laboratory; some of these were tobacco spittle; but there were others higher up, of which I discovered nothing definite; on Sunday these were moist; they were said to be nitrate of copper; I have experimented to determine whether nitrate of copper would destroy the *globule character* of blood; I placed some blood under the microscope, and added some nitrate of copper; in the course of a few hours the discs of blood had disappeared; there were brought to me a pair of slippers and a pair of pantaloons; these are the same slippers, and these are the same places where I cut out certain spots; I have satisfied myself that these spots were blood; these are the same pantaloons; I cut the spots from them; I obtained a sign from these spots which satisfied me that they were blood; I think the drops of blood did not fall upon the pantaloons from any great height, say three feet, otherwise the drop would have assumed the elongated form on the surface upon which it fell; the spots are on the lower part of the outside of the left leg.

Dr Holmes sworn—Am Parkman Professor in the Medical School of Harvard University, and Dean of the Faculty; I saw the remains found at the college; they indicated anatomical knowledge on the part of the person who dissected them; my attention was drawn to the manner by Dr Wyman, and I can only confirm the general statement, that there was no botching about the business; I observed the effect of chemical agency on the flesh, and length of hair on the shoulders; I noticed nothing in the remains dissimilar to those of Dr Parkman; a stab between the sixth and seventh ribs need not necessarily be followed by a great effusion of blood externally; it would depend on the direction of the wound; on the day of Dr Parkman's disappearance my lecture commenced at one; my lecture-room is over Professor Webster's, and I never was disturbed by a noise from the room below—chemical explosion or other.

[The evidence for the defence commenced on the 27th of March. We select that portion which is from physicians and dentists.]

Dr Lewis, jun., sworn—I have known Professor Webster for thirty years; he always stood fair as a man of humanity, and kindly feeling, never a man of violence; I have frequently had difficulty in gaining admittance to Professor Webster's room when in the Mason Street College; I did examine the cut between the ribs; it was not a clean cut; if it had been, that would not show that it might not have been done after death; I could not form any conclusion from the appearance of the fracture of a bone, whether the fracture was made before, or after it was calcined; we finished our examination on Sunday; when I saw Dr Strong at the laboratory, we had finished our examination.

Dr Holmes sworn—There are two principal authorities on the subject of the quantity of blood in the human body; one says one-fifth of the weight of the subject, 27 or 28 pounds; the other between one-fourth and one-fifth, about 34 pounds, about 17 quarts or something less; in regard to forming an opinion respecting the shape of a fracture before or after calcination, it depends on the degree to which they are calcined; if calcined to a moderate degree, I could not judge to say with certainty.

By the Attorney-General—Should not prefer Dr Wyman's opinion to my own; have examined the specimen shown by Dr Wyman, and could not form any opinion, as to whether it was fractured before or after being calcined.

E. N. Horsford sworn—When I took possession of Professor Webster's

laboratory, I sent out to Cambridge an old blanket, two pairs of pantaloons, one or two coats, a pair of overalls, and a light cap ; I examined the overalls cursorily before I sent them out, and observed nothing on them ; I looked over all the clothes ; I have seen the same garments since, and observed no change in them ; there was no blood upon them. *Cross-examined*—I found the overalls in the small private room ; I think the policeman had used them for a pillow ; there was perhaps a gallon and a-half of nitric acid in the laboratory ; about thirteen or fifteen pounds ; I could not say how strongly it had been concentrated ; I think it would require rather more than the weight of a body to dissolve it in nitric acid rapidly ; in the experiments I made in dissolving bones and muscles with nitric acid, no odour escaped ; I discovered no apparatus about the laboratory sufficient to use 150 pounds of nitric acid ; 1 have not examined the spots on the staircase ; I attached no importance to them, as it is common to drop.substances about a laboratory ; nitrate of copper would not affect the fabric of clothes at once.

Dr W. Morton sworn—I am a dentist, and have practised about eight years ; I usually manufacture all the mineral teeth I use ; I have had opportunities of knowing Dr Keep's work ; I see nothing peculiar about these teeth (those found in the furnace) by which they could be identified ; I see nothing peculiar in the grinding of mineral teeth to make room for the tongue ; it is quite common ; the mode of pinning the teeth to the plate is quite in the usual manner ; the position of the hole is that laid down in the late books ; the block of teeth found in the furnace fits the mould of Dr Keep no better than many I could pick out of a refuse lot of blocks ; the block which was found in the furnace has the same appearance as those which I take from my furnace, when they have fallen in by accident ; I think the three teeth in the mould are those of the lower jaw, which we generally allow to remain, in preparing it for blocks of mineral teeth ; I think the action of fire has warped one of the blocks, and the lower one, I argue, may have also warped, so as to fit, more or less perfectly, the mould of Dr Keep. *Cross-examined*—I knew Dr Parkman, and should hardly know whether to say he had a peculiar jaw ; I never saw any two jaws alike ; all jaws are alike in some respects ; I have seen a good many like Dr Parkman's jaw, and I can't think it peculiar ; I am not at liberty to name my patients whose jaws project as much as those of Dr Parkman ; I could not identify my own work, after it had been into the fire ; in many instances I could identify it before it was subjected to the fire, but not always ; teeth when fitted for one mouth with plates would not answer for another ; I should say that the person, the mould of whose jaw I have exhibited for remarkable absorption, was between 50 and 60 ; teeth fitted for both jaws would be much less likely to fit the mouth of another person than if fitted for one. *Re-examined*—the blocks, separate and distinct, might fit the mouth of another person than the one for whom they were prepared.

Dr J. W. Stone sworn—I was one of those who examined the remains found in the laboratory ; we finished our examination on Sunday ; the hole between the ribs was not a clean cut ; and there would be no difficulty in making such a cut after death, more than a butcher would have in cutting a piece of meat.

Rebutting Testimony for the Government.

Dr D. Hardwood sworn—I am a dentist of this city, and have been in practice since 1829 ; I am one of the Councillors of the Massachusetts Medical Society ; I have always been busily engaged in the manufacturing mineral teeth, and one of the first ; there are distinct marks of identity by which a dentist can know his own work, as a general thing, especially in what are called "large cases ; " by large cases I mean where several teeth are connected by plate, or in a block ; single teeth would depend upon the composition ; 1 also think a dentist would recognise the work of another, though I would not say positively that I could identify Dr Keep's work ; as I see the patients of other dentists, I sometimes remark that this is the work of Dr Keep or Dr Morton,

and generally the patient says I am correct. [The teeth from the furnace were here shown to the witness.] These are covered with foreign substance, and I should be unwilling to speak positively as to them, as there are other dentists who use the same composition as Dr Keep, such as Drs Flagg and Kelly; these teeth seem to be of the same composition as is used by Dr Keep; the style is certainly Dr Keep's, for he does not separate the teeth down to the gums; it may be the style of others also; there is something peculiar in the shape of the block which might enable the maker to identify it as his own work. [The mould was here shown to the witness.] There is a striking peculiarity on the left side, the great absorption. [Objected to, and the court confined the witness to a general identification.] If I had made such a piece of work, and had seen it recently, and compared it with the model, I think I should know it; nor do I think Dr Keep could be mistaken. *Cross-examined*—We don't do all the work ourselves, but have assistants; I can't find among my models any which present so great an absorption on one side *only* as that of Dr Parkman.

Dr Tucker sworn—I have been engaged in dentistry for twenty-one years, and at work all the time. [Teeth and models were shown to the witness.] I should not wish to give an opinion except as to one block in the left lower side, and that, I think, affords accurate means of identification. *Cross-examined*—They may have warped, owing to having been subjected to heat.

Dr Codman sworn—I am a dentist, having had a medical education, and practised as such between sixteen and seventeen years. A part of that time I have given exclusive attention to the manufacture of mineral teeth; I think these teeth and the model would be sufficient to enable a dentist to identify his work.

The trial terminated late on Saturday, the 30th of March, by a verdict of guilty from the jury. Sentence of death was passed on Monday, the day of execution to be appointed by the governor.

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Part Fifth.

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MEDICAL NEWS.

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MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

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SESSION XXIX.—MEETING XI.—*April* 17, 1850.—JAMES SYME, Esq., President, in the Chair.

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FATTY TUMOUR.

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The *President* exhibited a very large fatty tumour, recently removed from the neck of a man, who was still under his care in the Infirmary. The tumour had been of slow growth, and not only caused inconvenience from its size and situation, but was also the seat of painful sensations. In the descriptions of fatty tumours given in books, it was usually stated that their presence caused no pain, but he had met with frequent exceptions to this doctrine. The tumour exhibited, although very large, had been attached by a narrow base, and its attachments, as usual, were subcutaneous. Hence there had been no difficulty in effecting its removal. But in another case, on which he had occa-

sion to operate lately, a fatty tumour, of seven pounds in weight, situated on the back, was found to be covered by the trapezius and latissimus dorsi muscles, and to be attached beneath the scapula, between the ribs, and to the long muscles of the back. In this case, of course, careful dissection was required in order to remove the whole mass. Some part of the growth had consisted of fibrous tissue, which had induced him to give a guarded prognosis at the time of the operation as to its ultimate success. Both cases were doing well. He took this opportunity of mentioning, that the existence of non-cancerous fibrous tumours of the mamma, with which British surgeons had been long familiar, and of which he had shown several specimens to this Society at one of the pathological meetings last year, was still controverted in Paris.

MEETING XII.—*May* 1, 1850.—Sir WILLIAM NEWBIGGING in the Chair.

CRETINISM IN SWITZERLAND.

Dr Coldstream read a communication on the present state of cretinism in Switzerland, and on the progress recently made in its treatment on the Abendberg, by Dr Guggenbühl. After some remarks upon the statistics of cretinism in different countries, and on certain theories by which it had been attempted to account for its frequency in particular localities,—as, for instance, Alpine valleys,—Dr Coldstream gave a detailed account of the origin, nature, and success of Dr Guggenbühl's labours. His theory was, that the deplorable state of mental degradation denominated "cretinism" could be best prevented by removing children, who manifested any liability to this condition, from the valleys where they were born, and by placing them in such an institution as that on the Abendberg, where they enjoyed all the advantages of pure mountain air, cleanliness, regular exercise, proper nourishment, and suitable mental training. By improving the physical condition of such children, the tendency to cretinism was often overcome.

Dr Guggenbühl, who was present, then stated that he had now had ten years' experience of the efficiency of the system which Dr Coldstream had described. Last autumn he had an opportunity of visiting in their homes a number of children who had been inmates of his institution on the Abendberg. The success of his treatment, in a considerable proportion of these cases, had been most encouraging. Some had now passed the age at which a relapse of this terrible malady was to be apprehended; for others he had recommended certain nutritious articles of diet, baths, exercise, &c. For some months past he had been travelling on the Continent and in England, informing himself as to the state of cretinism in the different localities which he visited. In Germany, institutions similar to his own had been for some time in existence, and report spoke favourably of their efficiency. He had seen well-marked cases of cretinism in Yorkshire, Lancaster, Somersetshire, at Chizzleburgh, &c. At the last-mentioned place, he had met with four rachitic cases, precisely resembling those of Switzerland. It would be very interesting to make observations on this subject in Scotland.

Dr Spittal begged to ask Dr Guggenbühl, whether anything analogous to goitre and cretinism was observed among the lower animals in Switzerland?—and whether there was anything in the nature of the food used in the valleys where cretinism prevailed which could possiby induce the disease?

Dr Guggenbühl replied that, in some localities, dogs had been observed to become affected with goitre; and that cattle brought to certain valleys, as those of the lesser Rheinthal, did not thrive, but degenerated and became weak. In a great part of Switzerland, the ordinary food of the peasant consisted of maize, which, in the form of "polenta," was consumed at all his meals—three or four times a day. The "pellagra" of Tessino and Lombardy was believed to be attributable to the excessive use of "polenta." Of late years, efforts had been made to improve the diet of the peasant class, and turnips,

carrots, &c., were now very generally used. Although inclined to attribute a pernicious influence to insufficient or improper nourishment, he could not regard it as essential to the production of cretinism. The gradual degeneration and extinction of the old "haute noblesse" of Switzerland could not have been due to the use of insufficient articles of food. The cretinism in these old families was probably due to their frequent intermarriages, and to the climate of the valleys in which they lived. In the valleys of Switzerland, the population must be renewed by the infusion of new blood, from time to time, or degeneration of the race would be soon observed.

Dr Alison remarked, that the attention of the medical profession in this country had been first directed to the subject of cretinism by the publication of Dr Abercrombie's inaugural dissertation, "De Fatuitate Alpina." If, as appeared from Dr Guggenbühl's account of his practice, it was in the power of the physician, by a wholesome system of bodily and mental training, to avert the miserable state of imbecility which otherwise awaited his infant patients, and to succeed in one-third of the cases committed to his charge, the result was certainly satisfactory. There was an institution at Highgate, near London, conducted on principles similar to those pursued by Dr Guggenbühl, on the Abendberg. He inquired if there was any certain mode of distinguishing between cretinism and ordinary idiocy in very young subjects ?

Dr Maclagan inquired, if relapses were frequent in the experience of Dr Guggenbühl ?

Dr Hamilton recollected that Dr Monro used to mention Coltbridge, a small village near Edinburgh, as a locality for goitre. Did any member of the Society ever hear of a cretin in that village ?

Mr Syme remarked, that it was very likely that one or two cases of goitre may have been formerly observed in Coltbridge, and, the population being small, these cases might have given rise to speculation. The hills of Peebles, and the country about Hawick, furnished at the present day examples of the same disease (*goitre*), even in males. Cretinism, in the sense used by Dr Guggenbühl, was a very comprehensive term, including scrophula, hydrocephalus, and rachitis.

Dr Guggenbühl stated, in answer to Dr Maclagan, that relapses were rare after the seventh year. Children younger than this, who had benefited much by residence on the Abendberg, but had been too soon removed from his care, had certainly relapsed. It was not always easy to discriminate between cretinism and ordinary idiocy. Cretinism was, however, a bodily as well as a mental disorder. He had hoped that the same treatment which he used in cases of cretinism would be found of benefit in cases of idiocy.

Dr Alison observed, that this was a truly important point, which he had wished to bring out, that Dr Guggenbühl considered his treatment applicable to all fatuous patients, of a certain age, whether their fatuity was connected with idiocy or with cretinism.

Mr Brown read a biographical notice of the late John Walker, Esq., F.R.C.S., together with some extracts from his correspondence. The conclusion of this communication was postponed till next meeting.

REAPPEARANCE OF SCURVY NEAR MELROSE.

The wards of the Royal Infirmary at present contain a few well-marked examples of scorbutus. The patients are all railway labourers, who have been working in the neighbourhood of Melrose for some months. The origin of the disease is, we believe, in every case clearly attributable to the same faulty or insufficient diet, to which it was conclusively traced by Dr Christison, in 1847— (see "Monthly Journal," July 1847). The food used by such of these men as we have ourselves interrogated seems to be :—Coffee, with bread and salt butter, or

oatmeal porridge, with water or butter, to breakfast ; bread and butter, or bread and cheese, or bread and salt meat, to dinner ; coffee or porridge, at night. They do not use, and state that they cannot procure, fresh meat, milk, beer, or vegetables ; some of them say that they have not tasted a potato for years. Their health is soon re-established by the ordinary diet of the hospital. A great number of the scorbutic cases sent to the Infirmary, in 1847, had originated in the neighbourhood of Melrose, among the same class of workmen who are now the subjects of the disease. It is very important that those who employ large numbers of railway labourers should understand the absolute necessity of supplying them with vegetables, fresh meat, and milk, in order to maintain their physical condition, and that they should lose no opportunity of recommending to their men the daily use of a certain portion (of some one at least) of these articles of food. It is melancholy to see fine muscular young men crawling into an hospital, in an advanced stage of scurvy, after losing the product of a winter's hard labour, and subsisting, it may be, for some weeks upon the charity of their comrades, and to reflect upon the ignorance, or culpable negligence, which has occasioned their sufferings. And it must be added, that scurvy and pauperism are not the only evils which flow from the long-continued use of improper food.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Most of our readers are probably aware that the British Association for the Advancement of Science is to hold its annual meeting for the present year in Edinburgh, under the presidency of Sir David Brewster. One of the original sections of the Association was dedicated to medical science ; but of late years, owing to the meetings having been held in towns where medicine was not very much cultivated, this section has been abolished. It has become a question, however, whether or not in a university city, distinguished as possessing the largest medical school in this country, some effort should not be made, once more to place medical science in the position to which it is entitled. It is impossible to secure this point, however, until it can be ascertained how such a section or sub-section is to be supported. Gentlemen, therefore, desirous of reading papers connected with anatomy, histology, physiology, pathology, and general therapeutics, are hereby requested to give intimation of their intention to Professor Bennett, the local secretary of this department, in order that the necessary arrangements may be made before the Association meets.

VARIETIES.

PINEL, BARTHEZ, AND CORVISART.—At the commencement of the present century, French medicine boasted of three great men : Pinel, a naturalist physician; Barthez, an ideal physician; and Corvisart, a practical physician. Pinel, a geometrician by taste, but a naturalist by study, not being able to reduce medicine to an equation, reduced it to a classification. Barthez, a profound but obscure metaphysician, wished to transform a science of facts into a science of abstractions. Corvisart, a man of sound mind and good judgment, ignorant of philosophy, had no conception of medicine beyond the application of the senses. In a disease, Pinel sought for a genus or species ; Barthez, an entity ; Corvisart only the malady. For Pinel, the disease was a problem to solve ; for Barthez, a principle to be laid down ; for Corvisart, an enemy to combat. Pinel treated medicine as Linnæus did his plants ; Barthez as Plato did politics ; Corvisart, as having a mission to relieve and cure. The Emperor Napoleon,

who knew mankind well, said of Pinel, he is a *savant*, let him be appointed to the Institute. He gave to Barthez the *honorary* title of his first physician, but *never* consulted him. Corvisart he made his personal physician and friend.— —*L'Union Médicale*, Avril 18, 1850.

ANAPLASTIE HÉTÉROPLASTIQUE.—A child was recently brought to the hospital of Strasbourg, on account of a nodulated and highly retractile cicatrix, consequent on a burn, and occupying almost the whole surface of the hand. To supply the loss of substance, M. Sédillot determined to borrow a portion of the skin of a dog! A small flap of skin from the belly of the animal, smooth and perfectly white, was attached by suture to the bleeding hand after the removal of the cicatrix, and suitable apparatus was used to preserve contact between the child and dog for two days. But the indocility of the child, and violent struggles of the animal, rendered it impossible to maintain the contact with all necessary accuracy, and the flap being perpetually pulled about, mortified. "Perhaps," adds the commentator, "by some mechanical improvement in the mode of uniting the parts, or by paralyzing the animal, the success of such a heteroplastic operation might be secured, as physiology would induce us to hope."—*Gazette Médicale de Strasbourg*, 1850, p. 83-84.

M. CAPURON.—This celebrated obstetrician, who has recently expired, left by his will 1000 francs per annum to the Académie de Médécine, for an annual prize; the following sentence from which testament seems to have occasioned among our French brethren no small astonishment,—it is a singular proof of good sense,—" I wish that my funeral should be simple, modest, and conformable to the manner in which I lived; and that no speech should be pronounced over my grave."—*L'Union Médicale*, Avril 25, 1850.

URETHRAL PHTHISIS.—M. Ricord has described to the Académie de Médécine, in Paris, the case of a man, aged fifty-eight, from whom, some years ago, he removed a tuberculous testicle, and who lately died in the hospital. On examination, the mucous membrane of the urethra was studded over with miliary tubercle, the prostate had disappeared, and was replaced by a true tubercular cavern. This is the second example of urethral tubercle met with by M. Ricord.—*L'Union Médicale*, Avril 4, 1850.

HARVEIAN SOCIETY OF EDINBURGH.—We omitted to notice in our last that this Society held its annual festival on the 10th of April. The dinner went off with the usual hilarity, and we especially remarked the enthusiasm with which Colonel Boldero's health was drank, in compliment to his noble efforts in the House of Commons in support of the Assistant-Surgeons of the Navy. The subject of the prize essay for 1851 is an " Experimental Inquiry on the Action of Iron, comprising especially the question of its Accumulation in the Blood."

THE UNIVERSITY OF KŒNIGSBURG.—This university, formerly so celebrated, is said to have now fallen into decay, and to be only attended by students from the eastern provinces, too poor to visit other seminaries. With the exception of Rathké in anatomy, and Dull in chemistry, the medical faculty consists of unknown men,—so that the number of students who follow the clinique is rarely more than eight or ten.— *Gazette Médicale*, Avril 20, 1850.

MORTALITY OF CHOLERA IN FRANCE AND ALGERIA.—During 1849, the number of deaths from cholera was, in France, 85,000,—that is, 1 in 449 persons ; while in Algeria, among 183,000 Europeans, there were 8000 deaths—that is, 1 in 23.—*L'Union Médicale*, Avril 13, 1850.

By a recent vote of the National Assembly, the salary of professors in the Faculty of Medicine has been reduced from ten to nine thousand francs per annum.

MR LANGSTON PARKER'S RECLAMATION.

" 20, Colmore Row, May 11, 1850.

"Sir,—I do not mind fair and impartial criticism, and perhaps a little editorial abuse (necessary, perhaps, to the sale of a periodical) seasons the dish of a dull critique, and makes the reader swallow what otherwise would be unpalatable.

" You say you have never read my book on the Treatment of Secondary Syphilis ; then why abuse it ? If it be true that you have, as you say, only read the first four lines of the preface, and then given me (as you think) a regular extinguisher, you have done me a gross injustice. 1st, For reviewing, or passing an opinion, on what you have not read ; and 2dly, For having abused me for being of the same opinion as yourself.

" The tenor of my work is directed against the evils of ordinary mercurial treatment, and a suggestion for the avoidance of such evils.

" You have misrepresented me entirely ; and I do think some justice is due to me for so gross, false, and unwarrantable a misrepresentation.—I am, &c.

" LANGSTON PARKER.

" To the Editor of the Monthly Journal of Medical Science."

[Mr Parker says that we have misrepresented his opinions in regard to the use of mercury, and that they are the same with those entertained by ourselves. We beg to remind him, that our misrepresentation—if it was one—consisted in the quotation of his own preface ; and as to the alleged similarity of our sentiments, must refer to what was stated in the last Number of this Journal, together with the details of Mr Parker's practice, into which we have considered it our duty to look. In every one of the thirty-two cases which the author has related, we find that he prescribed mercury,—and how, in these circumstances, he can profess anti-mercurial principles, we are altogether at a loss to imagine. Let him dismiss his " mercurial fume," as he calls it ; and, if he uses vapour baths, employ them simply as such. We shall then be happy to acknowledge him as a friend and brother.—EDITOR.]

BOOKS RECEIVED.

The Quarterly Medical Recorder. Part I., Vol. 1,—from Feb. to May. Lond. : 1850.

Temperance and Total Abstinence, or The Use and Abuse of Alcoholic Liquors in Health and Disease. By Spencer Thomson, M.D., &c. London. Churchill. 1850.

On the Principles of Health and Disease,— Inaugural Dissertation. By David Nelson, M.D., Edinburgh, Physician to the Queen's Hospital, and Professor of Clinical Medicine in Queen's College, Birmingham. London. Churchill. 1850.

A Physician's Holiday, or a Month in Switzerland. By John Forbes, M.D., F.R.S., Physician to her Majesty's Household. Second Edition. London : 1850.

Practical Handbook of Medical Chemistry. By John E. Bowman, Fellow of the Chemical Society. London. Churchill. 1850.

On the Theory and Practice of Midwifery. By Fleetwood Churchill, M.D., &c. Second Edition. London : 1850.

A Manual of Elementary Chemistry, Theoretical and Practical. By George Fownes, F.R.S., &c. Third Edit. London : 1850.

Journal of the Statistical Society of London. Vol. XIII. Part II. May, 1850.

Table Générale des Matières contenues dans les volumes 25ieme à 35ieme inclusivement, du Bulletin General de Therapeutique, &c. Paris : 1850.

Zeitschrift für Klinische Medizin, mit dem Verein für Physiologische Heilkunde in Breslau, Herausgegeben von Dr Friedrich Günsburg. Band I. Heft I. and II.

Deutsche Klinik, Zeitung für Beobachtungen aus Deutschen Kliniken und Krankenhäusern. Herausgegeben von Dr Alexander Göschen. Berlin. No. 14. 1850.

The Principles of Surgery. By J.A.Orr,A.B., F.R.C.S.I. Dublin. Fannin & Co. 1850.

Atalektasis Pulmouum, or Closure of the Air-cells in the Lungs of Children. By George A. Rees, M.D. London : 1850.

Report of the Pennsylvania Hospital for the Insane, for the year 1849. By Thomas S. Kirkbride, M.D. Philadelphia : 1850.

Casper's Wochenschrift für die gesammte Heilkunde. Berlin : 1850. (16 numbers duly received).

Bibliothek for Læger. Redigeret af H. Selmer. Kjobenhavn. (Seven numbers duly received a few days ago. Our numbers, including that of February,have been sent, directed to Dr Otto, through the Messrs Longman's house.)

Archives Générales de Medicine. (No number of this Journal for 1850 having reached us, and our own exchange having been regularly transmitted, we shall send no more till we have received the numbers due.)

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